Modern LITHOGRAPHY

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TECHNOLOGY

JANUARY, 1960

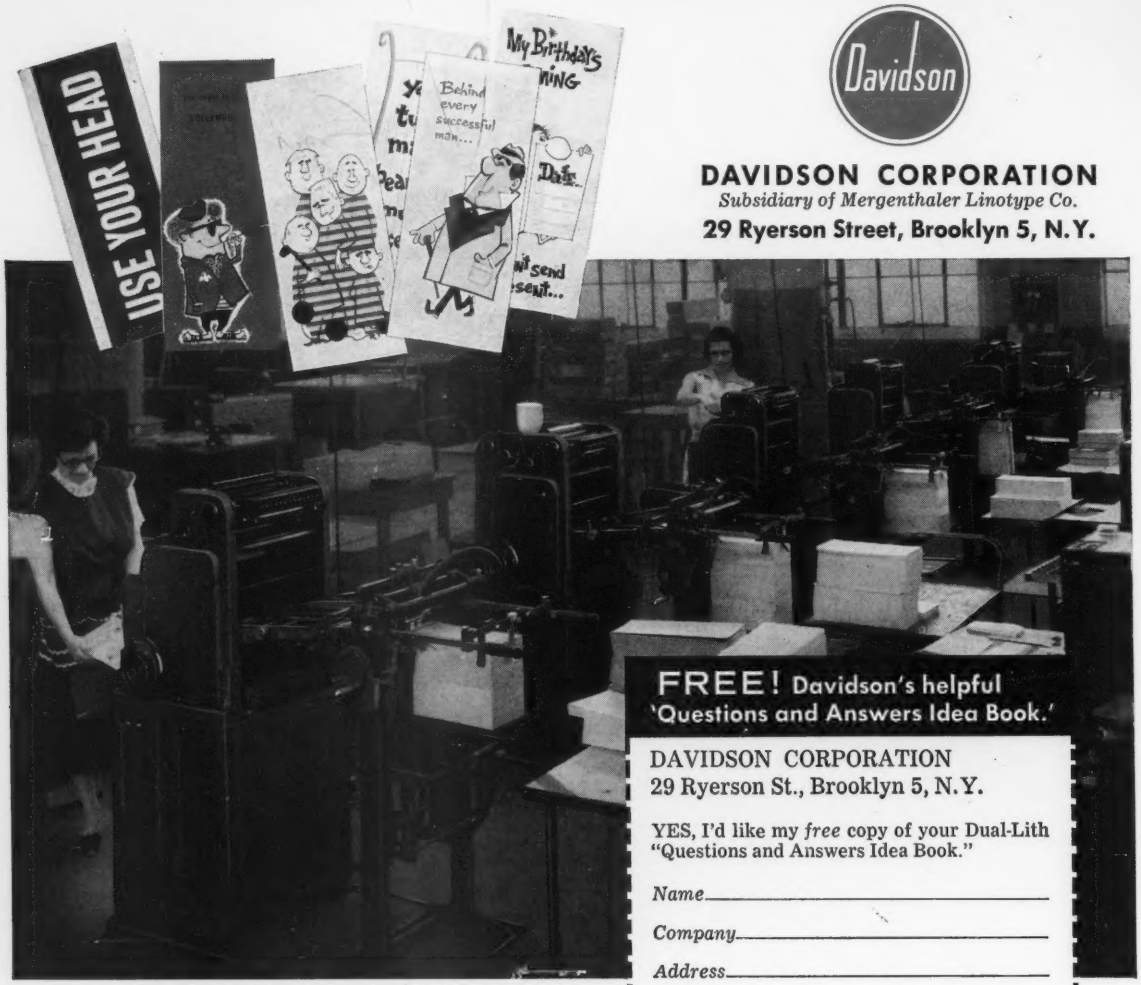
45 million Greeting Cards printed annually—on DUAL-LITHS

A giant in the greeting card industry, American Greetings Corporation turns out 2½ million greeting cards daily . . . ranging from simple black and white to delicate 5-color work on satin. Here, in their own words, is why DUAL-LITHS were picked to help do the job!

"Quality is the prime ingredient in a greeting card. Yet in this competitive field, cost-consciousness is an unavoidable fact of life. American Greetings Corporation found the answer in fifteen Dual-Liths (models 221 and 241). They are used for conventional offset printing, thermography, and spangle application, using inks, ink bases, or adhesives. Other Dual-Lith operations make use of type, rubber plates and Linotype slugs. Because of the enormous versatility and speed of these machines—even short runs are economical and easy. A complete switch from offset to letterpress takes less than a half hour!"

Another thing: "Maintenance of these Dual-Liths is very low," says Al Prokupek, head of the press department. "Some of the Dual-Liths run on a 2-shift basis—with no breakdown problems!"

Small wonder why American Greetings is so sold on Dual-Lith. You will be, too, when you see it. Why not arrange to do just that? Just call your local Davidson Distributor—or drop us a note—today!



Partial view of installation of 15 Dual-Liths at American Greetings Corporation.

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Subsidiary of Mergenthaler Linotype Co.
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FREE! Davidson's helpful 'Questions and Answers Idea Book.'

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YES, I'd like my *free* copy of your Dual-Lith "Questions and Answers Idea Book."

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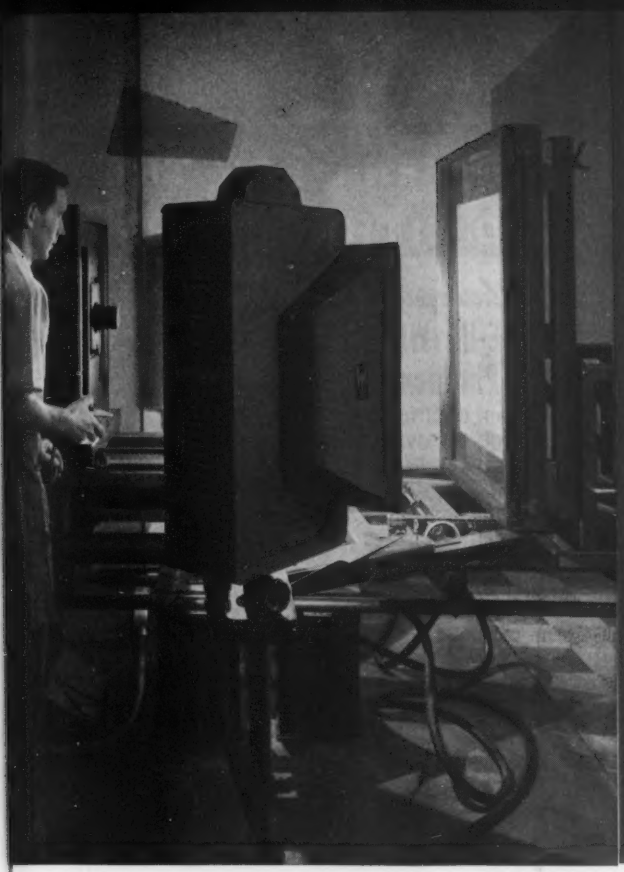

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Take advantage of Roberts & Porter service before the sale and make sure your cameramen, strippers, platemakers, pressmen get the right equipment and supplies . . . the kind of graphic arts tools that help them make the most of their skill.

Yes, the shortest, fastest route to more efficient production begins at the Roberts & Porter branch near you. And your R & P representative is well qualified to help you select equipment and supplies that best meet your requirements from copyboard to press: cameras, photo-composers, line-up tables, film, press washers, blankets, water levels.

Remember this: your R & P representative follows through to make sure you get full benefit from what you buy. Here are a few items in the complete R & P line:

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Radiant electric heat on underside of cover reflects on top of revolving plate. Heating, drying and whirling controlled by electric switches for manual operation or automatic presetting.

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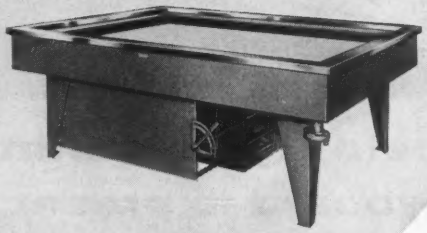

Removes hazardous fumes—at their source. No odor in shop or offices. Tables at convenient working height. Quiet operating exhaust blower. The Koroseal lined trough resists corrosion from chemicals used.

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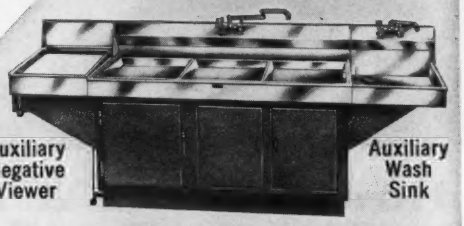
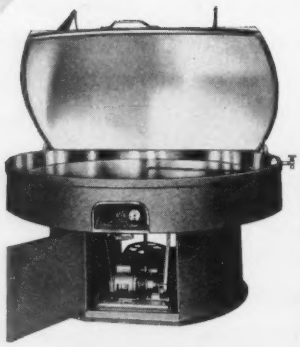


Temperature maintained to a fraction of a degree. The auxiliary negative viewer and auxiliary wash sink are optional units . . . can be designed for either side of basic sink. The three tray, basic sink can be ordered with, or without, either feature.



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- Layout Tables

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Printing Week

Jan. 17-23

Cover

Jan. 17-23 . . . those are the dates for the annual observance of Printing Week, the big chance for the graphic arts industry to tell—and show—the general public what our field is all about. For details of local programs, turn to page 36.

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MODERN LITHOGRAPHY

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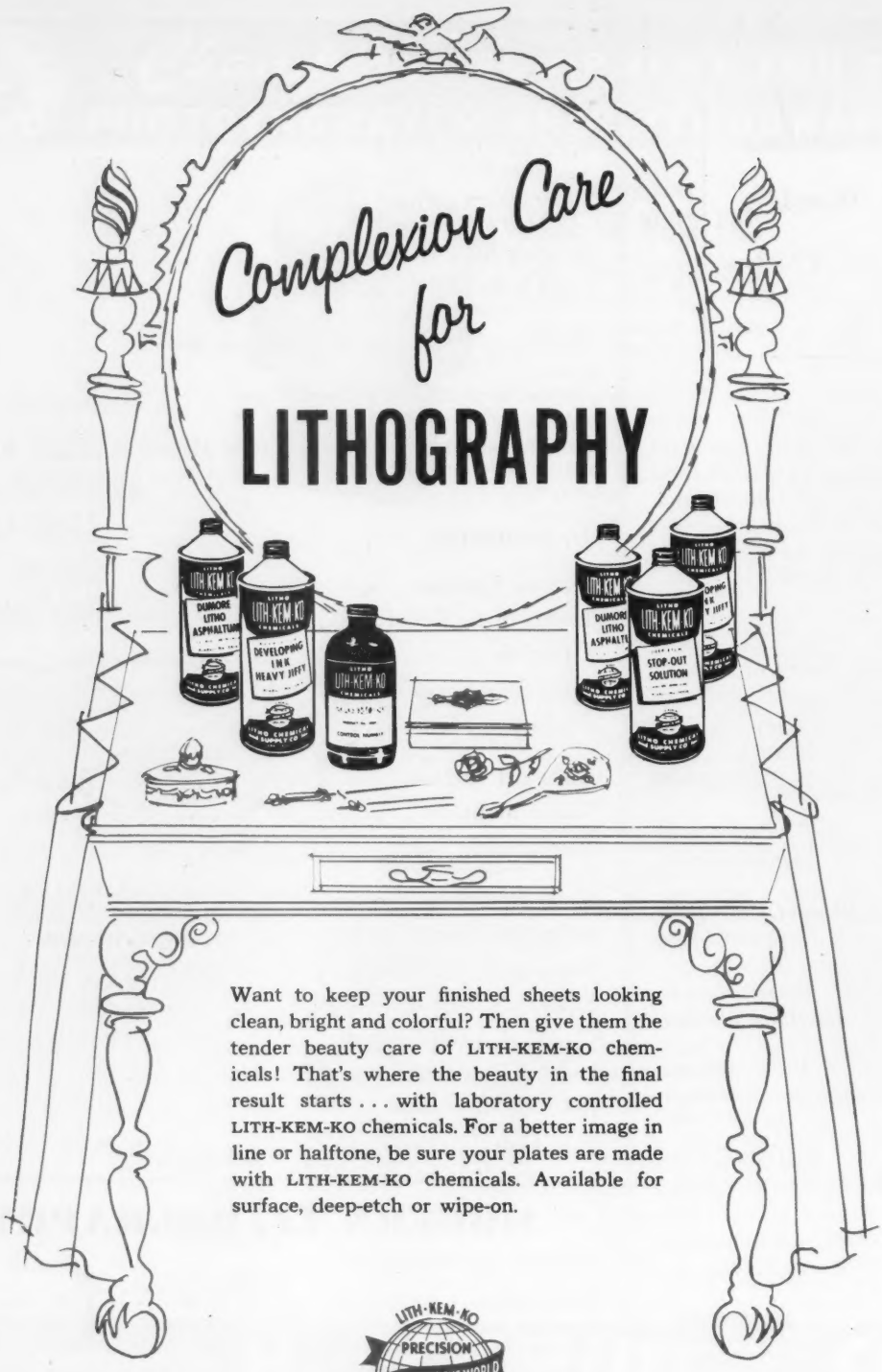

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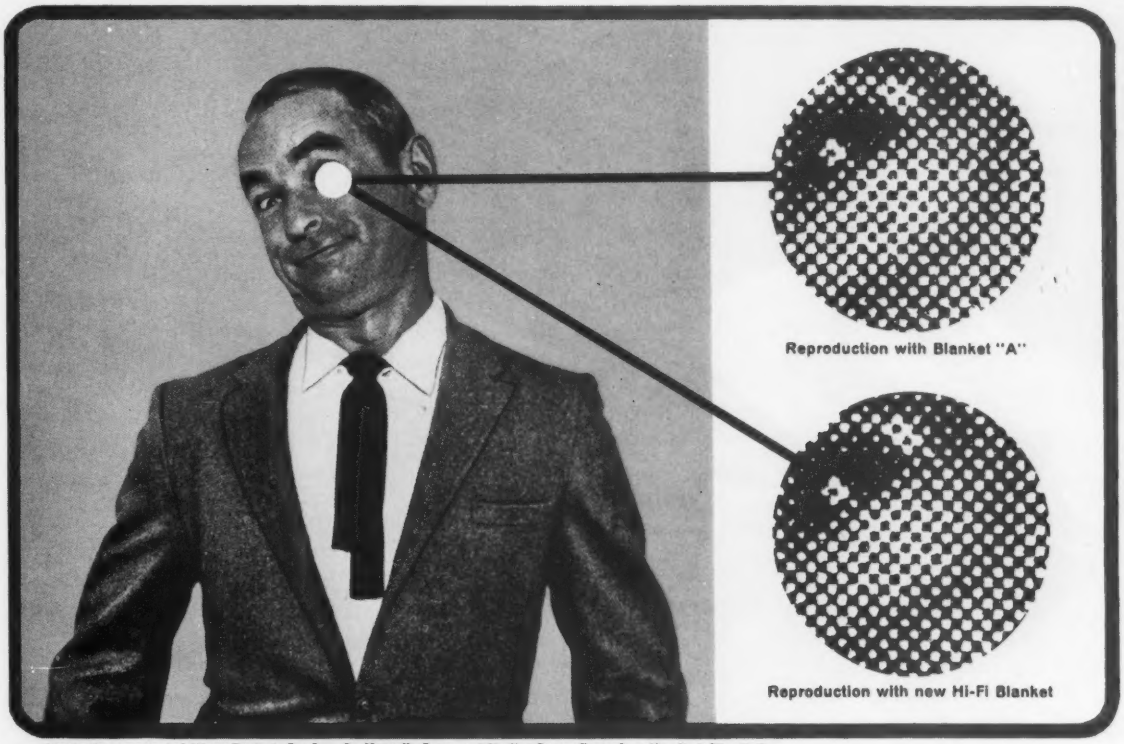

Illustrations courtesy of Albany Products Co., Inc., So. Norwalk, Conn., and Sterling-Roman Press, Inc., New York City, N. Y.

Just run your well-trained eye over the two comparison spots above. It won't take you a second look to discover the superiority of the new Hi-Fi blankets' work. Notice how the half-tone dots aren't mushed or distorted—the whole job's sharper, cleaner.

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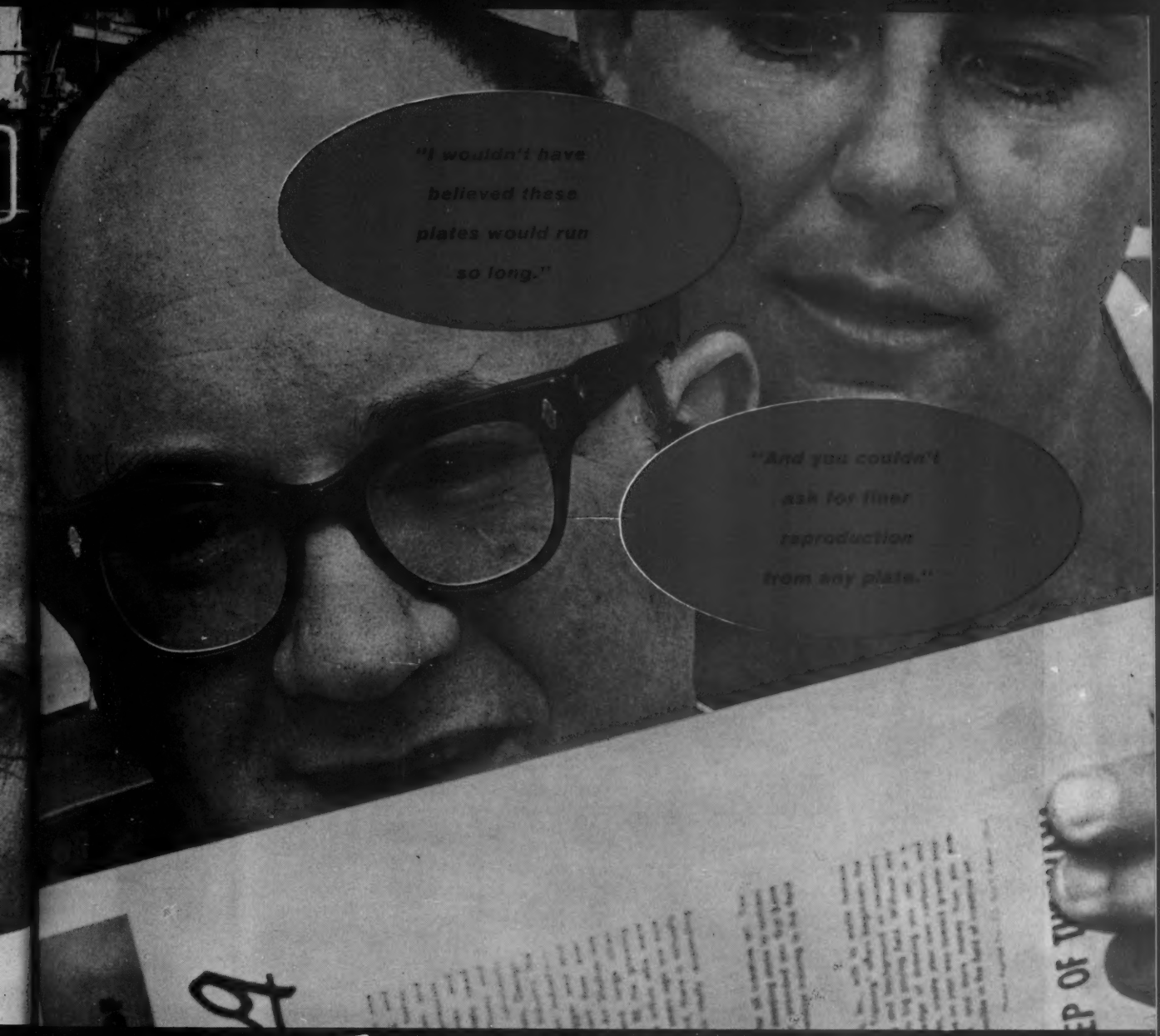

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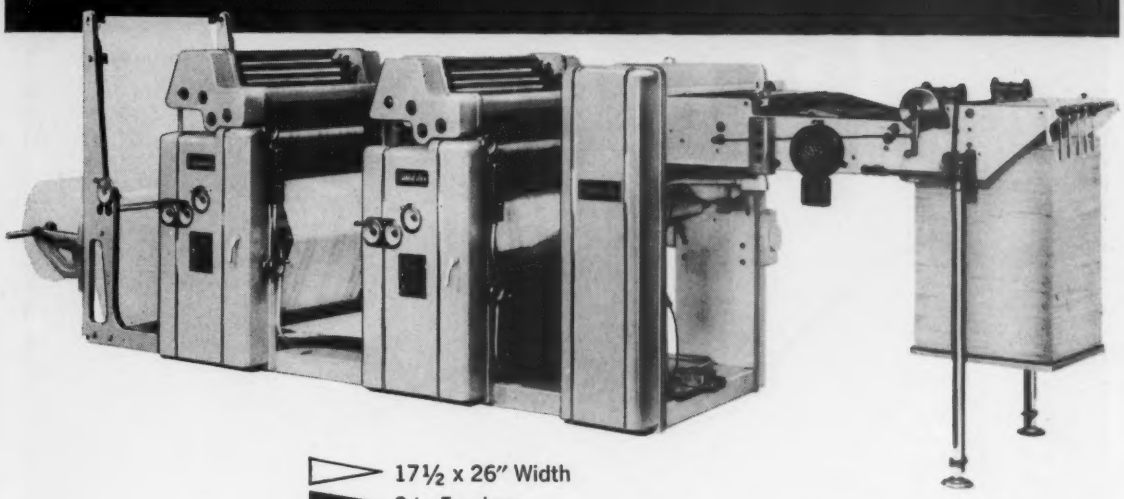

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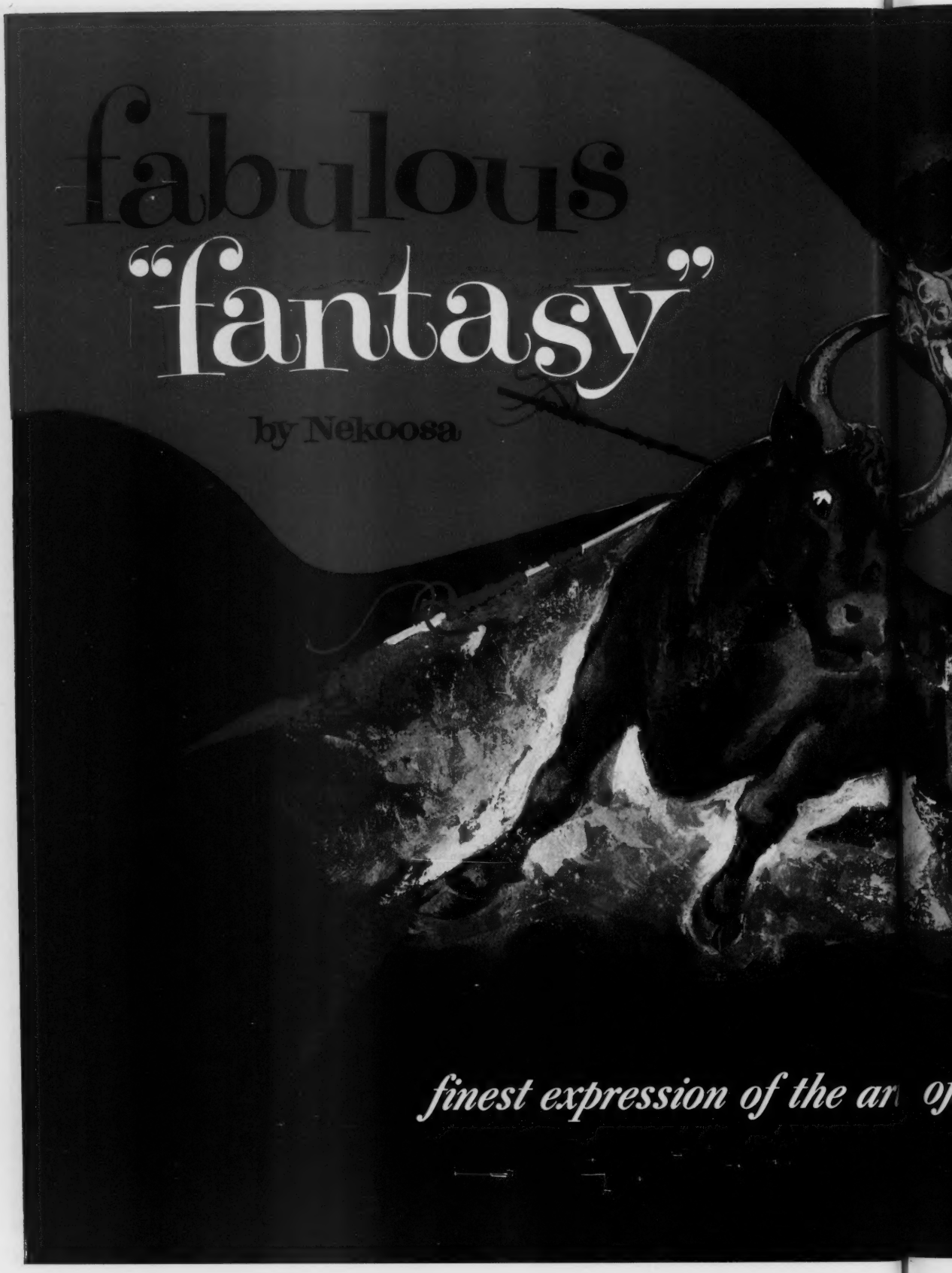
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by Nekoosa
finest expression of the ar

olé

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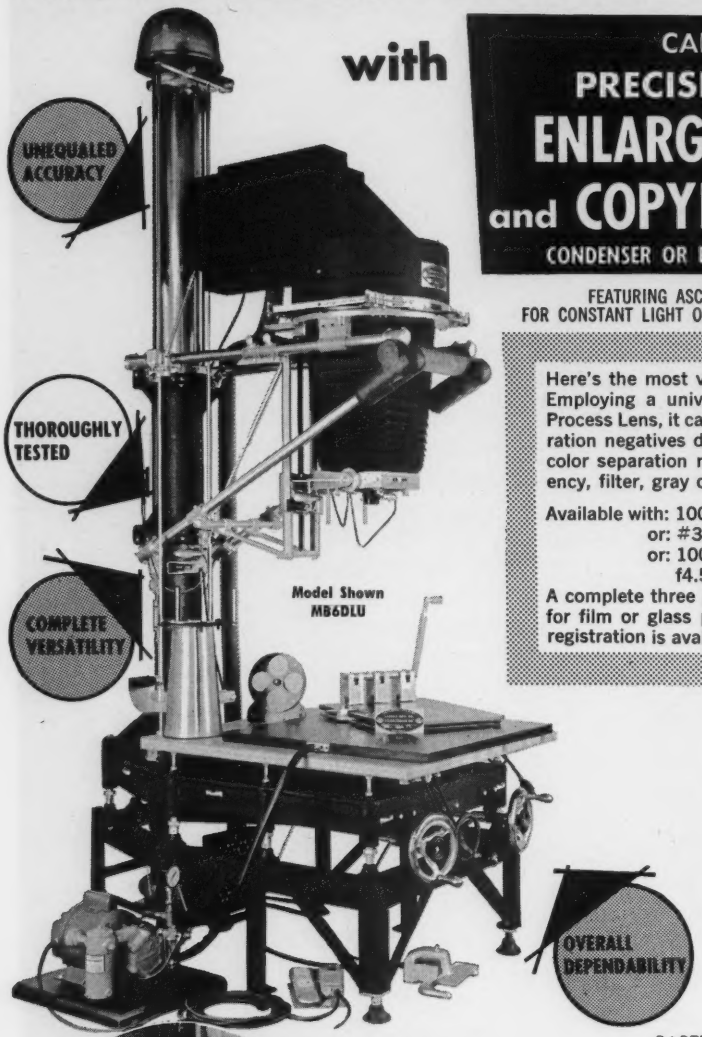

Model Shown
MB6DLU

Here's the most versatile enlarger in the Graphic Arts field. Employing a universal light head and 12" f.9 Goerz Artar Process Lens, it can be used for making continuous tone separation negatives direct from copy, or continuous or halftone color separation negatives direct through a mask, transparency, filter, gray or magenta screen. Also halftone positives.

Available with: 1000 watt Xenon Pulsed Arc Light Source
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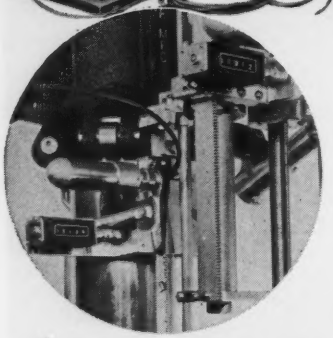

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Dept. of National Defense, Ottawa, Canada
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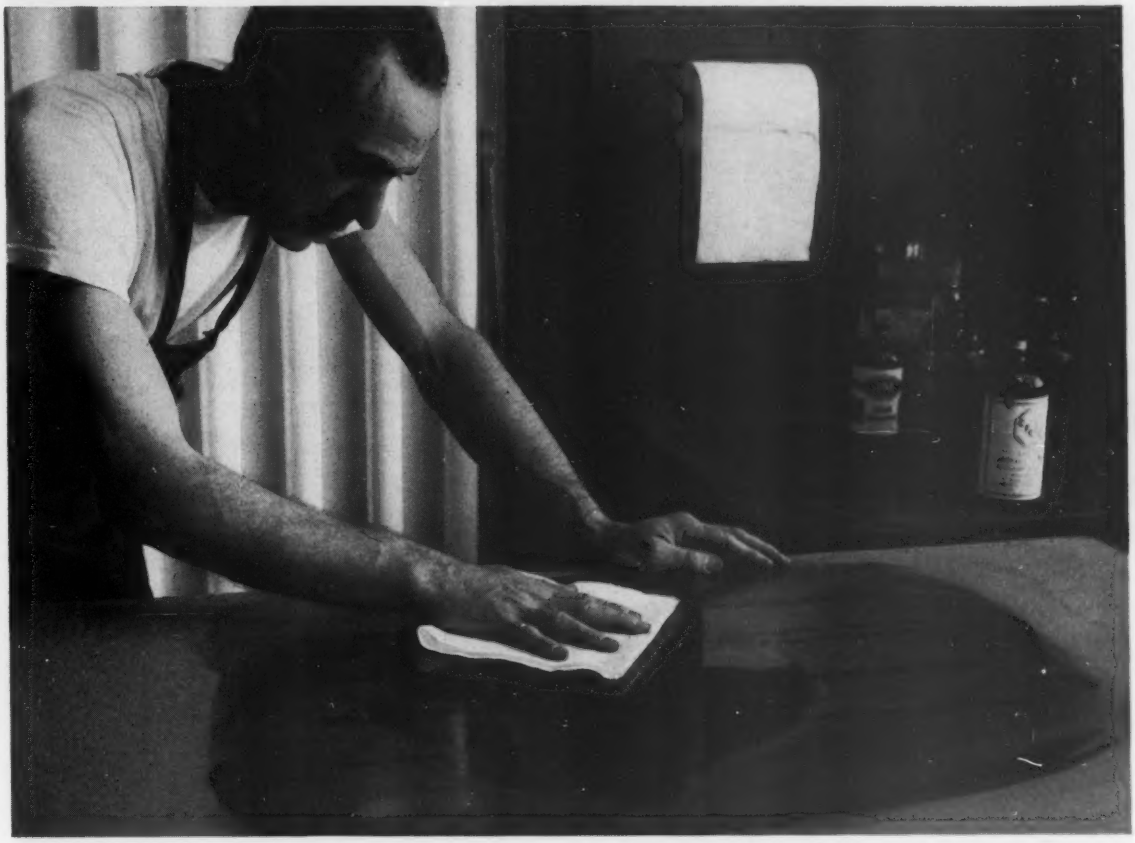

Platemaker Edmond J. Browne, of Forbes Lithograph, Boston, using Webril Wipes in processing deep etch plate

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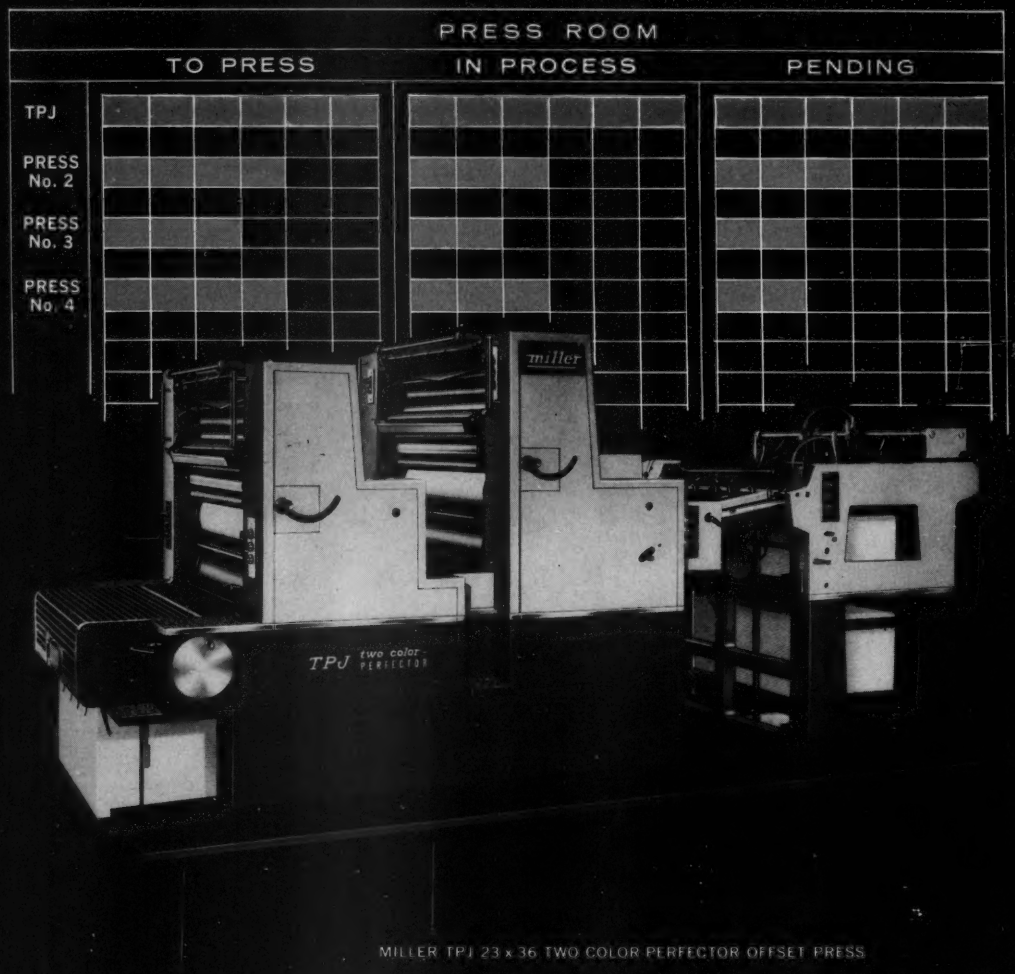

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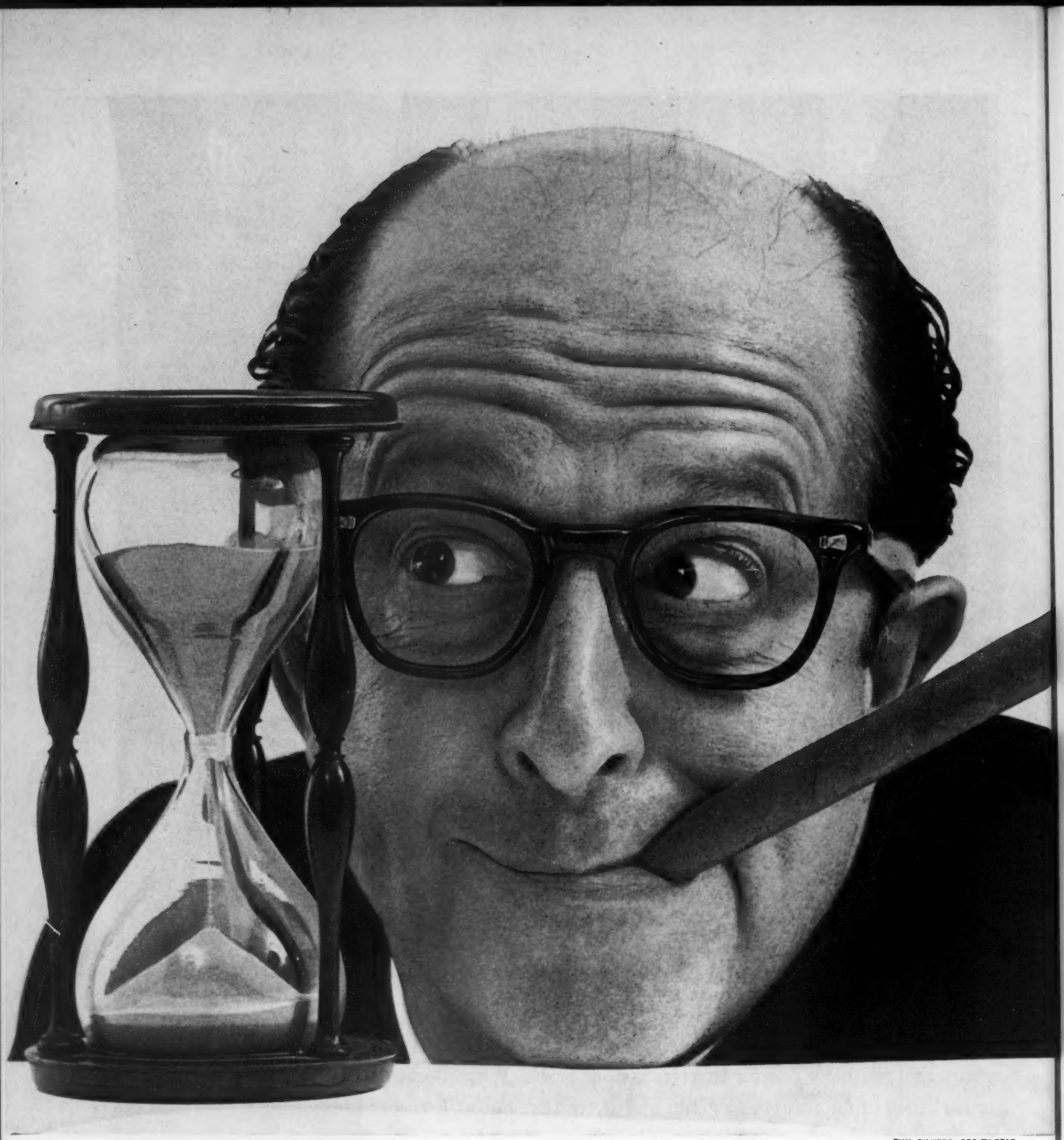

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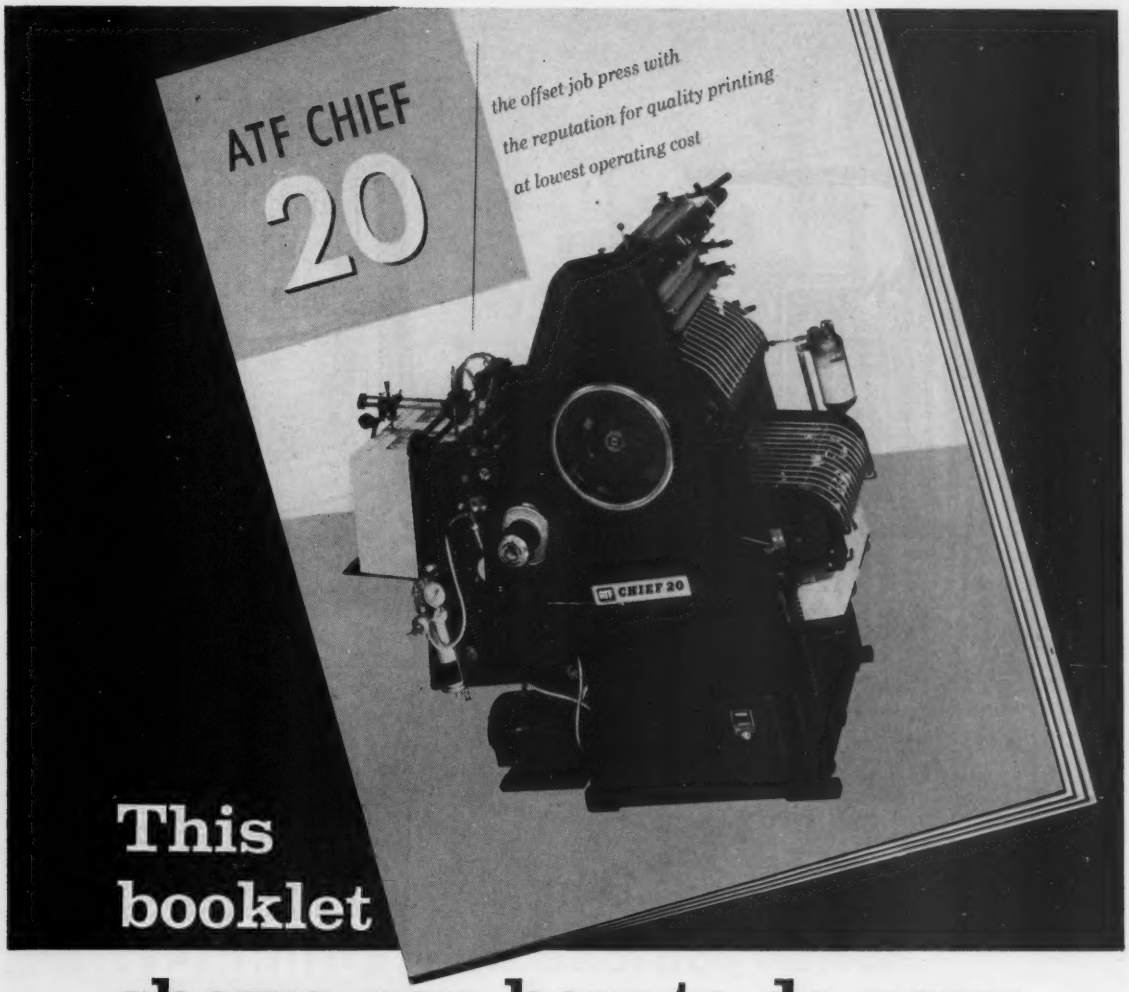

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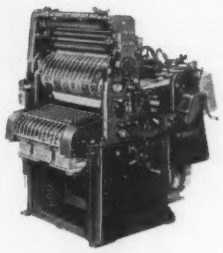

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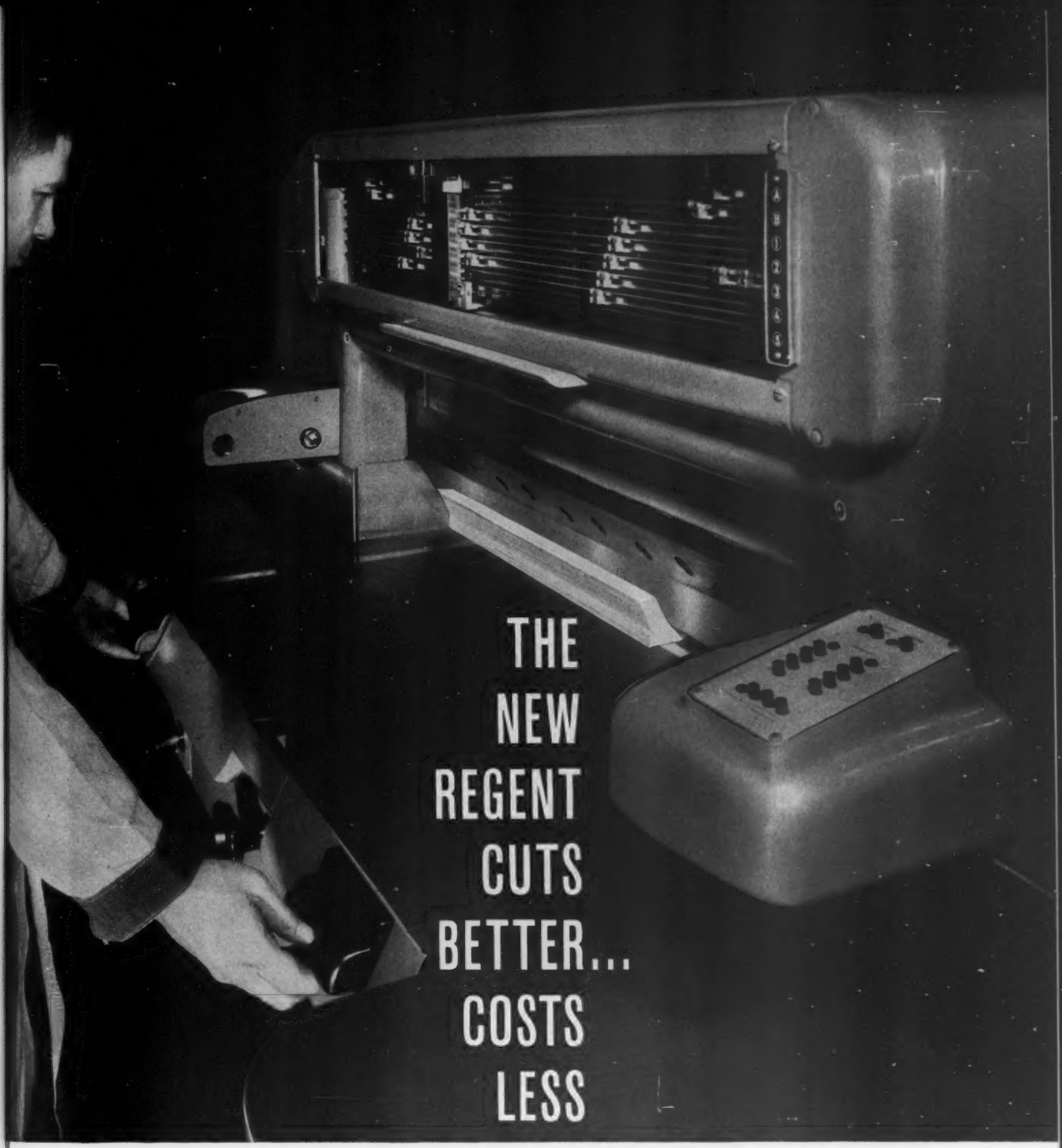

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Enjoyed Articles

Dear Sir:

I enjoyed the series just concluded on "Reproduction to Accurate Size," and wish to express my appreciation to the author, Mr. Frank H. Smith, for unreservedly sharing his knowledge with the readers; and to the editors of MODERN LITHOGRAPHY for making this series possible.

Anthony Connell,
Los Angeles

Author Smith thanks you; we thank you.—*Editor.*

•

Likes ML Articles

Dear Sir:

Your publication has ben continually read, except for the war years, and used as an invaluable reference since shortly after its origin in the early 1930's.

The articles of potential personal interest are clipped and filed by subject matter. In the course of my daily calls on the graphic arts trade these articles are frequently lent to craftsmen.

One of these valuable articles has been misplaced so I would like to request tear sheets for replacement in my file.

(*Continued on Page* 115)

Meetings

Inter-Society Color Council, 29th annual meeting, Philadelphia, April 11-12.

Web-Offset Section, FIA, annual meeting, Hotel Chase, St. Louis, April 20-22.

Southern Graphic Arts Association, 39th annual convention, Hotel Eola, Natchez, Miss., April 21-23.

Lithographers and Printers National Association, annual convention, Boca Raton Club, Boca Raton, Fla., April 25-28.

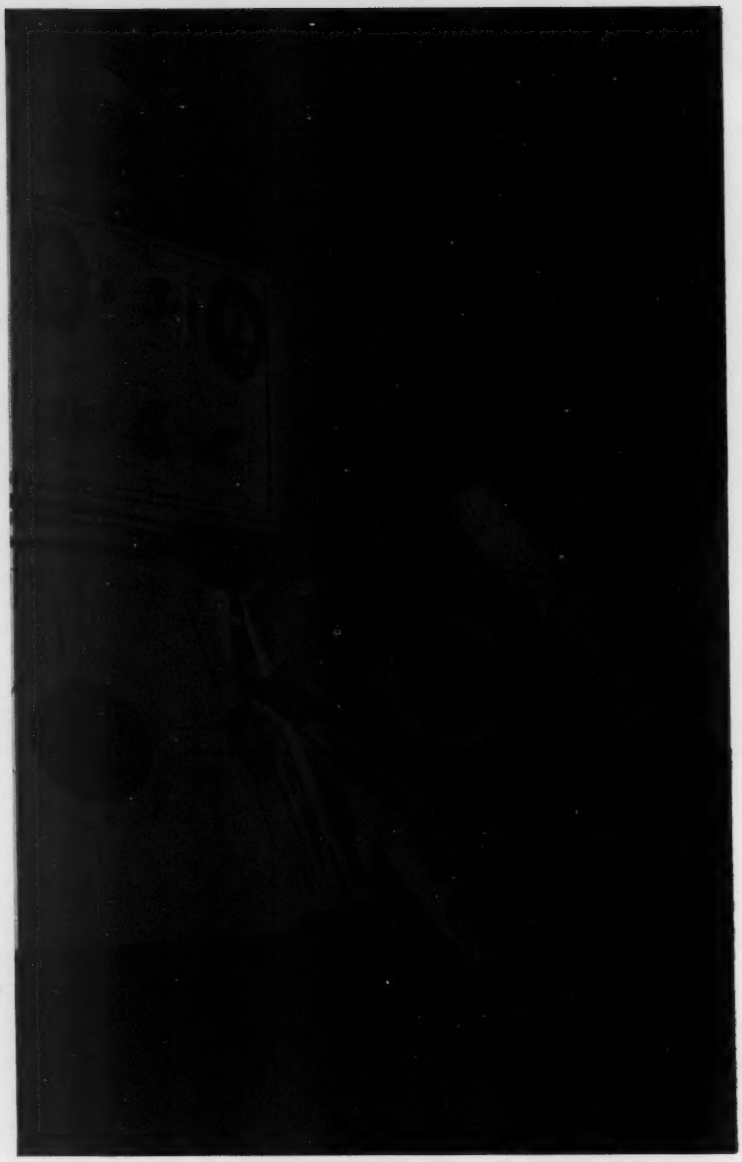
National Association of Litho Clubs, 15th annual convention, Hotel Statler, Boston, May 19-21.

Technical Association of the Graphic Arts, 12th annual meeting, Washington, D. C., June 20-22.

Printing Industry of America, 74th annual convention, Sheraton Park Hotel, Washington, D.C., Oct. 24-27.

National Association of Photo-Lithographers, 28th annual convention and exhibit, Hotel Conrad Hilton, Chicago, Oct. 5-8.

National Metal Decorators Association, 26th annual convention, Shoreham Hotel, Washington, D. C., Oct. 17-19.



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Fine Arts Awards Made

Winners in the fourth annual Graphic Arts Competition for Fine Arts sponsored by Techni-Craft Printing Corp., New York, were announced Dec. 10 at a public showing of over 300 entries in the 1959 competition. At the two-day exhibition held at Freedom House in New York, over 500 members of the graphic arts industry attended. The art show included works of 127 artists.

First prize of $150 went to Allan Glicksman for his oil painting entitled "Yonkers Tenement" as well as to his sponsor, Joseph Glicksman, both of Madison Advertising Co.

Roc E. Campanelli won second prize of $100 for his photograph, "Old Man." Both he and his sponsor, Stanley Flaum, who received a duplicate award, are with Batten, Barton, Durstine & Osborne.

The $50 third prize was awarded to William Giacolone, a free lance artist, for his oil, "Backyards" and a duplicate award went to sponsor Harold Beauchamp of Chartmakers, Inc.

•

PIA Group Elects Hamilton

Kenneth A. Hamilton, president of Argus-Greenwood Inc., has been elected head of the Printing Industry Association of East Central New York. He succeeds Everett Singer of Amsterdam Printing & Litho Co.

Delno F. Stageman, of Williams Press Inc., was reelected secretary-treasurer; Robert C. Roberts, publisher of the Mid-York Press, was elected vice president and F. Newkirk, Albany, was reappointed executive secretary of the association.

•

Laurel Adds Equipment

Laurel Process Co., Inc., New York, has installed a 34 x 40" Borrowdale darkroom color camera as part of a general program of plant expansion and modernization.

Other equipment installed in this program includes a Rutherford RMT Photo-Composer for press plates up to 48 x 59", a temperature controlled darkroom sink, a deep-etch down-draft table, and a dot-etching sink. Air conditioning installations have also been made.

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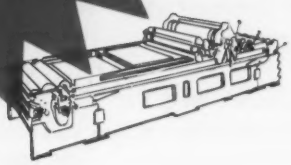

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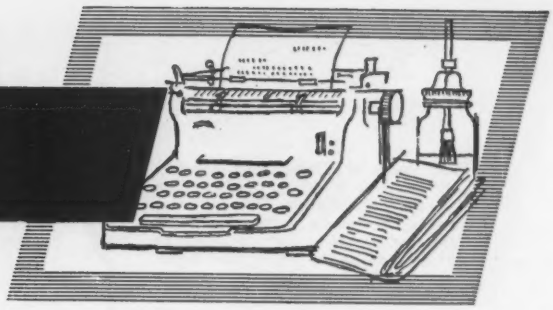


NALC Should Act Now!

THE National Association of Litho Clubs should take two important steps to assure its continued growth and future success:

1. *It should hire a paid executive secretary to act as regular administrator of the organization and to provide it with a permanent mailing address.*

2. *It should increase its budget—probably by raising dues—to support this move.*

Modern Lithography has followed the growth of the NALC from the very beginning 15 years ago and has been one of its strongest supporters. (This month, for instance, we have expanded our Litho Club section with a special report from president Fred Fowler). On several occasions we have made constructive criticism of NALC plans.

After talking with NALC officers, with local club leaders and with individual club members in a number of cities, we are convinced the time to make the two moves mentioned above is *now.*

NALC is big and getting bigger every year. From six clubs with fewer than 1,000 members, it has grown to 32 clubs with more than 4,500. Its communications, between officers, and between clubs, has in the past been sketchy, at best. Now, with clubs dotting the map from coast to coast, the lines of communication are being stretched even thinner.

This is nobody's fault. National officers, serving without pay and with innumerable out-of-pocket expenses, have done their best to knit the association into a closely working group. But their enthusiastic efforts have been only partly successful.

Nearly everyone admits that a permanent secretary with a permanent address is the only real answer to NALC's growing pains. ML shares that opinion and is convinced, further, that the time to act is right now, for nothing can be gained by waiting.

Of course the move will cost money and that may raise some squawks, as the last dues increase did. But, after all, present annual dues of $1.50 a member are quite nominal and no one should seriously object to an an increase to, say, $3.

What would be gained by such a move?

1. *Liaison between clubs and between officers would be vastly improved.*

2. *Much of the paper work would be simplified or eliminated, with savings to the treasury.*

3. *Some of the travel by national officers certainly could be reduced, with additional savings.*

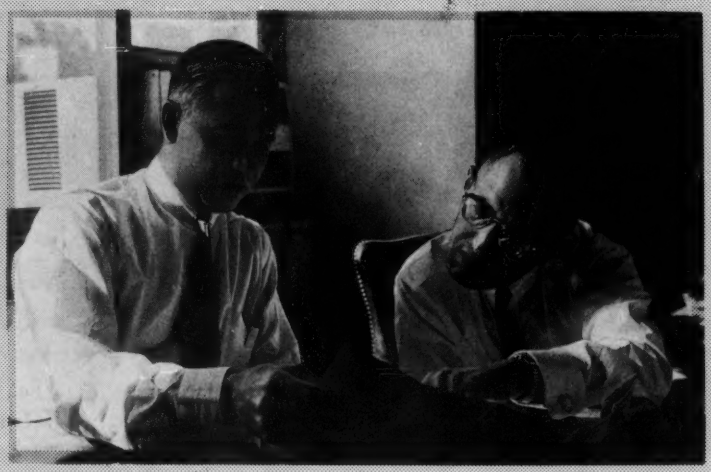
4. *A permanent mailing address would help promote better relations between NALC and graphic arts suppliers, many of whom are interested in disseminating technical information to member lithographers.*

5. *Perhaps most important, the establishment of a permanent administrator and a regular headquarters would be an immense psychological boost to NALC and to its many members. The group then could take its place proudly alongside the other fine associations in our industry.*

ML would like to see club representatives discuss the subject thoroughly at the three-way phone meeting late this month in Hartford, Oshkosh and Tulsa, and make a firm decision at the annual convention at Boston in May. It could be NALC's most important decision, and there is no reason why it cannot be made in 1960!★

Quote of the Month

'The NALC was established to help form other local Litho Clubs and to promote the sharing of knowledge. Naturally, having a parent organization takes money. The larger it grows the more time and money is needed to operate efficiently . . . our large membership has increased the duties of the NALC officers. It has gotten to the point where it is physically impossible to perform the duties of office efficiently . . .' Fred Fowler, president of NALC, in Litho Club section, this issue.



Three scenes at Edward Stern and Co.: (Left) Walter G. Arader (l.) president, and Louis Neibauer, vice president and sales manager, examine a recently produced piece. (Center) Refilling the ink fountains is an important part of keeping giant Miehle four-color 76" press running smoothly. (Right) Careful hand-etching on all four-color process separations helps Stern get fine quality results.

Shirtsleeves for Starched Collars

Walter G. Arader, new president and owner of Edward Stern & Co., quality Philadelphia litho plant, discusses his management philosophy and outlines some of the company's plans for the future

By *J. W. Dragonetti*
Philadelphia Correspondent

SHIRTSLEEVES have replaced starched collars at Philadelphia's Edward Stern & Co., Inc. "New broom" changes have swept through the eight-story plant under aggressive leadership by Walter G. Arader, who purchased sole ownership of the firm last June. The newly reorganized Stern team already has made several important changes and more are promised, ML learned last month in an exclusive interview with Mr. Arader.

The lithographic implications of the changes Mr. Arader has made and his planning for the future are especially significant because Stern's business is about two-thirds offset.

Widely Known for 'Optak' Process

Widely known in the lithographic industry for the quality of its "Optak" process, a Stern exclusive since it bought the patented Aquatone process in 1931, the company was expected by the trade to retain sole rights to its recently patented platemaking process, which uses electrolytic deposits of copper on stainless steel.

One of Mr. Arader's first acts as top executive officer was to make this process available to all qualified lithographers under a licensing agreement. Other refinements and improvements in manufacturing processes now being worked on by Stern's research team will also be offered to the trade, he added. An even greater emphasis on offset is anticipated, with the development of new platemaking and press processes.

This "open door" policy seems typical of the new administrator at Stern. His capacity for independent and original thinking is what brought Mr. Arader to the attention of the Weyl family, who inherited the business generations back from their relative, Edward Stern, who founded the firm in 1871.

From the University of Pennsylvania's Wharton School, where he majored in industrial management, Mr. Arader was commissioned a navigation and ordnance officer on aircraft carriers and saw extensive service in the Pacific during World War II. He returned to civilian life as a Commander in the Naval Reserve, and was retained by the General Electric Company as a management consultant in the industrial engineering department.

Intrigued by the challenge to apply new thinking in an old, conservative industry, Mr. Arader pulled up stakes in Bridgeport, Conn. and returned with his bride of two months to Philadelphia. This has been one of the

most significant changes in management in the graphic arts field in many years. Mr. Arader, who is 40 this month, is a comparative newcomer to the printing industry, having joined the company in 1950. Charles Weyl, former chairman of Stern's board, showed confidence in Mr. Arader because of his growing reputation for re-shaping management methods.

Mr. Arader started his training program in the pressroom. As an assistant in the manufacturing department, he studied every step of the printing process. After this "basic training" he specialized in new work methods, and the streamlining of procedures within the engineering and manufacturing departments. His work earned him rapid promotions: in 1951, he was named plant superintendent, and in 1954, plant manager. Last January he became executive vice president — top employe post in the Stern organization.

Here his financial and administrative background as a management consultant was given full play by Charles Weyl, chairman of Stern's board of directors. During months of intimate cooperation between Mr. Weyl and his young protege, it was agreed in principle that Stern's continued growth required not just low-echelon infusion of new blood, but top-level overhaul too.

As Mr. Arader puts it: "new procedures, new management, new ownership." According to a spokesman for the Weyl family, they were satisfied after nine years of performance that Mr. Arader had proved himself.

Analyzed Company Structure

A 30-page analysis of the company's structure and prospects was prepared by Mr. Arader and Harold Lesher, vice president and treasurer of the company, who has since been named to the board of directors. The report revealed Stern's strong financial position and its steady growth performance. It also presented a thorough blueprint of Mr. Arader's program for the future.

Submitted to examination by a group of Philadelphia banks, the study so impressed them that, with Mr. Arader's investment, sufficient financial backing was assured to effect the transfer of stock ownership from the Weyls to him as sole owner.

Mr. Arader quickly made it clear to the company's 250 employes that he planned no radical personnel changes. "The family feelings, the affection and devotion of old employes to a firm as long-established as ours, is a priceless asset," he explained. "We have shifted some people, and have greatly streamlined the organization, but, we feel, without violence to human relations; our people know we're planning a better future for everybody, and we've enjoyed complete cooperation. In old and big companies, a certain amount of overlapping, duplication, and archaic paper-work is bound to develop. We've been hacking away at this by establishing more direct lines of communications — and everybody involved seems to enjoy the new feeling of usefulness and self-reliance it engenders."

Gone are the days of plant administration through meetings; the new president delegates authority and holds department heads responsible for performance. "Meetings and conferences," he declared, "weaken lines of authority and waste the time of people who have the least time to waste. We assign direct lines of responsibility and authority to make decisions. It's a policy that works wonders for efficiency, and has vastly reduced our overhead costs."

Neibauer Named Sales Manager

For instance, Louis Neibauer, Stern's top salesman, has been appointed vice president and sales manager. With 24 of his 44 years spent in printing plants, 17 of them with Stern, Mr. Neibauer is well-qualified for his new responsibilities. He is responsible for "developing— not just 'selling' " close to one million dollars of Stern's annual sales (estimated by Standard & Poor's at five to six million).

After a study of compensation procedures prevalent in

(*Continued on Page* 120)

HOW TO ESTIMATE INK

By Robert J. Gans

President, Gans Ink and Supply Co.
Los Angeles

THE subject of estimating ink coverage is so vague and nebulous that to attempt to write about it in any definite manner is almost frightening. Search, if you will, all the articles about printing and lithographing and all the phases of the graphic arts and you will be hard put to uncover three articles on ink estimating during the last 10 years.

Why should this be so? Recently I asked Dr. Zettlemoyer of the National Printing Ink Research Institute if his organization had ever contemplated a study of this subject and he said no. He pointed out that the Institute, as all scientific endeavors, prefers to deal with exact things and ink estimating is far from exact and always will be.

So we come to the point where a few brave souls with crossed fingers and hard chins are willing to tackle the problem and give some answers to it.

In this article I shall discuss the entire problem of ink estimating and then offer a reasonably accurate method of estimating the amount of ink a given job should require.

Many Factors Involved

To approach the problem correctly we should review all the factors that can affect a printing job. These are legion. We have, for example, the absorbency of the paper, the different types of inking systems on presses, the temperature of the pressroom, the technique of the pressman, the variances in rollers, the layout of the job and so on. We are concerned with the thickness of the film of ink as it is applied to paper and what happens

Robert J. Gans

to this film during and after the application. During a press run the physical conditions surrounding the job change. The press generates heat and the rollers begin to swell and the ink may become tacky and break down. Ink consumption varies as these changes occur.

We have the case of the printer who runs a given job on a given day and uses X amount of ink. The next day with the same press and paper and form, he may use more or less ink. This can lead to a lot of confusion. However, on Monday the pressman may be in a jolly mood and take a lot of care; whereas on Tuesday, he may be constipated and grouchy and improperly prepare the job. As a result more ink is used. Paper, of course, plays a big role in all this and the paper companies cannot guarantee uniform absorbency rates so we find that even during a run the ink coverage may change while using the same skid of paper.

The age-old method of estimating ink coverage is simply to borrow from the experience of previous jobs and translate this into a current figure. Oldtimers can usually glance at a sheet and say that this form should take so many pounds to a thousand sheets. Another method is to start a run and check the ink used after a few thousand sheets have been run, and then arrive at a figure. But many pressmen do not have this experience and estimators in particular want to know the figure *before* the job is run.

Square Inch System

So we must have a better system. Today, the most popular one is the square inch method. By using this method, applying a bit of common sense and having a bit of good luck, a fairly good picture of ink consumption can be obtained.

Here's how it works:

1. *Measure the amount of square inches of ink on the copy.*
2. *Multiply the number of square inches by the total number of impressions to be printed.*
3. *Determine the number of thousand square inches to be obtained from the color from one pound of ink.*
4. *Divide the answer of Step No. 2 by Step No. 3.*

So you say, "Wait a minute, how do we determine Step No. 3?" I was afraid you would ask this, but I have an answer. For offset inks, here is one good rule of thumb:

- Full strength, transparent, and semi-transparent colors printed on coated, calendered or hard-surfaced papers should yield 350,000 sq. in. per pound. On offset papers, approximately 300,000 sq. in. should be obtained.
- Opaque inks produce at least 100,000 sq. in. less coverage than transparent ink. The greater the paper absorbency, the less the ink mileage obtained.
- For letterpress inks, strong colors run about 200,000 sq. in. to the pound for coated paper. The Ink Estimating Chart contained in this article presents a further breakdown on ink mileage for offset inks. Black inks, you will notice, give a greater mileage.

Offset Ink Estimating Chart

Grade of Stock	Enamel Paper	Offset Paper
Blacks	425	375
Blues	350	300
Reds	350	300
Purples	350	300
Transparent Orange	350	300
Transparent Yellow	350	300
Heavy Opaque Yellow	250	200
Tint Base	300	250
Opaque White	250	200
Browns	350	300
Transparent Greens	350	300
Overprint Varnish	425	375
Offset Silver Ink	350	300

The figures above represent, approximately the number of thousand square inches that one pound of ink will cover. Thus 1 lb. of Offset Black will cover 425,000 square inches on Enamel stock and so on.

Let's try a problem now.

Example: You have a job calling for offset red on a litho coated sheet and the run is 90,000 impressions. Measure the amount of red. Let us say you obtain 60 sq. in. Multiply 60 by 90,000. This will represent the total number of square inches of red to be run on this job, or 5,400,000 sq. in. The chart shows offset red on offset paper yields approximately 300,000 sq. in. to one pound of ink. You then divide 5,400,000 by 300,000 and you find that the job will use about 18 lbs. of red ink. Add waste allowance to the above figure for left-overs and wash-ups. This varies from 10 percent on 5 lbs. to 5 percent on 100 lbs. of ink.

Halftones and Type

When estimating forms with halftones, remember the tightness of the screen tone determines the amount of ink usage. This varies from 5 percent to a solid. For type matter, count 10 percent of solid for light face; 20 percent for heavy face.

The important thing is to obtain the square inch figure of solid coverage. In some instances this must be estimated by actual measurement or by computing the proportion of ink to the entire sheet of paper.

There are many other factors to be considered. For example, if one color prints over another, the second color will use less ink (about 35 percent less). There are some papers so absorbent that a surprisingly low ink mileage is obtained, as in the case of antique finish, poster and blotter stocks.

Any process of printing that lays a thicker film of ink will of course use more ink. Therefore, the letterpress process will use more ink than offset, and so on.

So there you are and now, armed with a ruler and this article, you may face the world of ink estimating with a firm conviction that you should have gone into bricklaying. At least you *know* how many bricks to use.★

Author Gans was born in Chicago in 1918. He started in the ink business at the age of 17 working after school. After spending five years in the infantry during World War II, he resumed his ink career with the Sleight Metallic Ink Co. of Chicago.

In 1946, he went to Los Angeles and 1950 he founded the Gans Ink and Supply Co. Mr. Gans is president of the Los Angeles Association of Printing Ink Makers and a director of the National Association of Printing Ink Makers.

Litho Schools

Canada—Ryerson Institute of Technology. School of Graphic Arts, 50 Gould St., Toronto, Ont., Canada.

Chicago—Chicago Lithographic Institute, 1611 W. Adams St., Chicago 12, Ill.

Cincinnati—Ohio Mechanics Institute, Cincinnati, Ohio.

Cleveland—Cleveland Lithographic Institute, Inc., 1120 Chester Ave., Cleveland 14, Ohio.

Houston — Univ. of Houston, Cullen Blvd., Houston 4.

Los Angeles—Los Angeles Trade Technical Junior College, 1646 S. Olive St., Los Angeles 15, Calif.

Minneapolis—Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis 3, Minn.

Minneapolis Vocational High School, 1101 Third Ave. South, Minneapolis 4, Minn.

Nashville—Southern Institute of Graphic Arts, 1514 South St., Nashville, Tenn.

New York—New York Trade School. Lithographic Department, 312 East 67th St., New York, N. Y.

Manhattan School of Printing, 72 Warren St., New York, N. Y.

Oklahoma—Oklahoma State Tech., Graphic Arts Dept., Okmulgee, Okla.

Rochester—Rochester Institute of Technology Dept. of Publishing & Printing, 65 Plymouth Ave., South Rochester 8, N. Y.

Pasadena—City College, 1570 E. Colorado St., Pasadena, Cal.

Philadelphia — Murrell Dobbins Vocational School, 22nd and Lehigh, Philadelphia, Pa.

Pittsburgh—Carnegie Institute of Technology School of Printing Management, Pittsburgh.

San Francisco—City College of San Francisco. Ocean and Phelan Aves., Graphic Arts Department.

St. Louis—David Ranken, Jr., School of Mechanical Trades, 4431 Finney St., St. Louis 8, Mo.

Vancouver—Clark College.

West Virginia—W. Va. Institute of Technology. Montgomery, W. Va.

Trade Directory

Internatl. Assn. Pig House Craftsmen
P. E. Oldt, Exec. Sec'y.
Room 307; 411 Oak St., Cincinnati 2.

Lithographers and Printers National Association
Oscar Whitehouse, Exec. Dir.
1025 Connecticut Ave., N.W., Wash., D. C.

Lithographic Tech. Foundation
William H. Webber, Exec. Dir.
131 East 39th St., New York 16, N. Y.

National Assn. of Litho Clubs
Frederick Shultz, Sect.
Buckbee Mears Co., Toni Bldg., St. Paul 1, Minn

National Assoc. of Photo-Lithographers
Walter E. Soderstrom, Exec. V.P.
317 West 45th St., New York 36, N. Y.

National Metal Decorators Assoc., Inc.
James G. Smith, Secretary
P.O. Box 506, Crawfordsville, Ind.

Printing Industry of America
Bernard J. Taymans, Mgr.
5728 Connecticut Ave., N.W., Washington, D.C.

To reduce costs, help customers' many graphic arts firms turn to . . .

Production Control

By *L. K. Straszewicz*
Graphic Arts Consultant

EVERYBODY is interested at present in application of production control in the graphic arts industry. Many large companies consider production control to be a vital part of their organization, greatly increasing efficiency and higher earnings. Some companies find application of production control to their shops an experience that did not give expected results. These cases will be analyzed later. First I want to draw a rough outline of production control, purposes and claims.

Two principal objects of production control are to (1.) reduce the cost of production and (2.) give satisfactory service to the customer. To accomplish this, it is necessary that every phase of production, from acceptance of a job up to its final delivery to the client, be supervised and controlled. This includes estimates of the hours of production.

In order to obtain satisfactory results, the production controller should have full cooperation of all other departments in the plant. The estimating department should advise him of the figures on each job received; the production department of the production schedule and so on, including the accounting department's figures pertaining to each job. The production controller should analyze the information and follow each step of the job from estimating to final delivery of the order, including necessary correction of proofs, quality of work, paper, ink, etc.

Production Controller's Job

The production controller does not have a managing position in production itself, but he accepts the schedule for jobs in production, indicating the time of completion. He checks proofs and explains the customer's correction and alteration to the production superintendent and checks against the final flats (or silver prints), to verify that required changes have actually been made—and made correctly.

The general purpose of production control is to improve production quality and profit by eliminating possible errors in processes of production and to establish more accurate profit control by analyzing the production value of performed work indicated on the worker's time sheet.

Production control functions are the following:

1. Take over from sales department, the orders for production (job envelopes) with all necessary copies and other materials and information supplied by the customer. After analyzing them, pass to production with full supplementary explanation.

2. Check that all proofs made for customer are in conformity with the order, then check the proofs returned by customer for the purpose of explaining to production people what corrections or alterations must be made and check that they are properly executed.

3. Watch constantly the progress of each job for quality and accuracy, referring to the instructions on the job envelope.

4. Watch the delivery date of all orders. See that each job is taken care of properly. Confirm with management when an overtime is desirable or necessary for fulfillment of orders.

5. Take care of all complaints coming from the customers or sales department concerning production problems.

This is one part of the production controller's activities and concerns only the actual production. The second part of production controller's duty, of no less importance to the company, is to analyze the whole production system in the plant—to look at every work time sheet for the purpose of evaluating the actual time used for a job and to compare it with the estimate for this operation. This is extremely important for an analysis of profits. It is also a part of the production controller's duty to supply management with daily and monthly reports incorporating critical surveys of plant organizations, personnel, equipment, maintenance, materials and so on. These reports should be analyzed very carefully by top management and discussed at the monthly meetings of the executives.

There is some confusion in the common belief that an accounting department can procure for management a "true" picture of work effi-

ciency in the plant. The accounting department's figures are, of course, accurate, but they should not be taken as a conclusive analysis of the production's efficiency.

Consider the following for example: A work sheet may show continuous work for five hrs., which must be shown by an accountant as 100 percent production time, regardless of the fact that the job could be accomplished in a shorter time; let's say in four hours, as was estimated. In this case the analysis will establish that productivity was only 80 percent. Furthermore, the accountant may show an "unproductive time" when the productivity analysis will verify the used time as productive, if it was spent for something necessary for production.

The production controller's job may appear to be very simple, but it is most important. He must have very high qualifications for this position, both in education and ability in personnel management. He must have long experience in a plant managing position, be familiar with all phases of production and be able to solve a variety of industrial problems. The fact that a man is an expert pressman, stripper or foreman or even an efficient department superintendent does not necessarily qualify him for the production controller position, where a journeyman's skill is not needed and can not substitute for the knowledge of a well-organized production control system.

The lack of properly educated, well-trained persons for this post may help explain why comparatively few companies have a production control system in their organization. My belief, however, is that the main obstacle lies much deeper, probably in some conservative prejudices of the management itself. People in managerial positions in production have a decidedly negative attitude to the idea of an independent controlling body acting in the shop. Usually it is the sales department that complains about inadequate care taken of customer's orders in the shop. Production people, as a rule resent very much any attempt of the sales department to interfere in this way. Production personnel consider themselves fully competent to control all production problems. Frequently a qualified production manager, who is an efficient administrator and known to be extremely exacting with his own staff, will nevertheless resent criticisms or complaints concerning the quality of production coming from the customer or the sales department.

Why He's Called In

Many times it is the belief of management that the foreman or superintendent is the proper man to control everything in his department, including quality, correction, delivery date etc., and that he is the obvious link between production and sales. Actually every graphic arts consultant knows that in most cases when a consultant is summoned to a plant it is to help in the problem arising from the fact that management is not able to prevent all kinds of errors in production, crippling normal efficiency and upsetting the entire personnel.

A modern plant superintendent has a great many production and administrative duties to attend to and he has neither time nor training to be a production controller, which is a full-time job in itself.

In addition, we all must face the fact that the training of an American journeyman is not so careful as it is in Europe, where an apprentice, to become a "Master of Trade" must pass an examination, to show his skill and to prove that he is ready for an independent (master) position. The American journeyman is efficient in performing a job, but he does not like to devote much of his time for a careful checking.

Duties of Foreman

The responsibility of checking is the burden on the foreman's shoulders. The American foreman is rightly considered to be a foundation of industrial efficiency. He is usually a good organizer and an efficient supervisor. Therefore, his qualities are rather of an administrative type, not of a checker. Every American has an innate dislike of red tape bureaucracy, especially in industrial organization. Consequently, a litho plant foreman is distrustful of every outside control so long as he believes this outside help to be a nuisance.

An open-minded superintendent or foreman can easily see how much help he can get in his work from a well organized production control. It will eliminate for him errors in the preparatory department and help prevent mistakes in his own department. The problem lies only in the tactful approach of the production controller to the production personnel.

It should be realized by management that neither superintendent nor foreman should be overloaded with duties for which he is not equipped and which could be done much better by someone who has a special knowledge and training for these duties.

I know that some shops of middle-size realize the usefulness of production control for better and smoother production, but are afraid of the extra expense for a highly paid specialist. Of course this problem could be solved for them only by a graphic arts consultant, who after surveying the problem of the shop, will help them to make the correct decision.

Production control should be considered in every larger plant as a necessary and permanent part of the organization, not as a temporary help to eliminate existing troubles in production. The production controller should not be considered a temporary "trouble shooter" or instructor to teach personnel how to avoid errors in production. Neither his duties nor his responsibilities should be distributed to others who are busy with other duties and who do not have the background necessary for production control. Management, above all, must realize what qualifications are essential for the duties of production controller. The decision to trust this position to somebody only because of his seniority in the shop will never give satisfactory results.

My suggestion would be first to invite one of the professional graphic arts consultants to make a survey of the situation in the plant and to present suggestions for improvement to management.★

Once again, it's time to celebrate

PRINTING WEEK

ONCE again it's time to tell the general public what printing and lithographing are all about. The vehicle, of course, will be the annual Printing Week observance, marked in every major city around the country with exhibits, dinners, speeches, proclamations, forums and posters.

The dates are Jan. 17-23, the first date being Benjamin Franklin's birthday, and the reason for selection of this January week each year for the observance.

Lithographers and Litho Clubs are quite active in some local celebrations, dormant in others. Most of the impetus of this program comes from the Craftsmen's clubs.

Miss Dorothy Provine, television and Warner Bros. star, has been chosen Miss Printing Week for the nation (see cover photo), and many cities have chosen, or will choose, local queens to reign over their celebrations.

Following are Printing Week details from some of the cities and areas:

Twin Cities

Reuel Harmon, Webb Publishing Co., past president of PIA, heads the PW committee, which is planning the annual Printing Week banquet. Identity of the speaker was not known at presstime.

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New England

In the New England states, the PW observance is called Printing & Publishing Week of New England, this year marking the 14th such celebration. General chairman is Burton L. Stratton, Harvard University Press.

Fourteen groups, including the Litho Clubs, are sponsoring the program. Gov. Foster Furcolo of Massachusetts, and Mayor-Elect Collins, of Boston, have issued the usual proclamations. A variety of displays will be featured in Boston department store windows. Boston Craftsmen will sponsor a forum on Saturday, Jan. 16 at the Sheraton Plaza.

Big social event will be the 14th annual P&P banquet at the same hotel. Morris Greenbaum, Graphic Arts Finishers, Boston, is in charge. One dollar of every banquet ticket will go toward a scholarship fund for a deserving student in the graphic arts.

Boston Litho Club's main contribution will be the annual Litho Forum, at Boston University, on Jan. 23.

James Fraggos, Litho Club and NALC leader, is secretary of the P & P Week committee. Miss Beatrice Duprey was chosen Miss Printing Week.

Twin City PW Queen.

Detroit

Another city planning an exposition is Detroit, where the show will run Jan. 21 to Jan. 24 in the Masonic Temple. Included will be many exhibits of graphic arts equipment and services, a contest to choose Miss Printing Week, announcement of scholarship winners and a program of educational films on the graphic arts.

Door prizes will be awarded each day, to stimulate attendance. A dinner-dance will cap the local celebration Jan. 23 in the Grand Ballroom of the Masonic Temple.

The Litho Club is one of 15 sponsoring groups. The displays and exhibits will be open from 11 a.m. to 10 p.m. each day.

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Baltimore

Dr. Kenneth McFarland, educational consultant and guest lecturer for General Motors Corp., will be speaker at the Franklin Day dinner, highlight of Baltimore's observance. It will be held Friday evening, Jan. 15, in the Sheraton-Belvedere Hotel. A display of national and local winners in the PIA Self-Advertising Awards competition will be on view.

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New York

As previously reported in ML, Henry Cabot Lodge, U.S. representative to the U.N., will receive the Franklin Award of the New York Employing Printers Association and address the annual PW dinner Monday evening in the Commodore. Ambassador Lodge was chosen for his "leadership in the search for peace and justice in world affairs."

Presentation of the award to Mr. Lodge will be made by Donald B. Thrush, chairman of the board of NYEPA. William H. Walling, Publishers Printing-Rogers Kellogg Corp., will be toastmaster.

Another feature of the week will be the 18th Exhibition of Printing, sponsored by NYEPA. The display will be in the Commodore.

•

Philadelphia

The Philadephia Club of Advertising Women and Women in Graphic

Arts will sponsor a special luncheon-fashion show, Jan. 19 at the Sheraton Hotel, during the Printing Week celebration in that city. The event will be staged at the Sheraton Hotel.

Big event of the week will be the Graphic Arts Exhibition with the theme "The Key To Better Printing —Print it in Delaware Valley."

The Exhibit will be on view in the Sheraton Hotel Jan. 18-22. The sponsoring group of graphic arts organizations declares that the observance is "designed to promote Delaware Valley's historic position as a major center of quality printing. . . ."

Once again the Litho Club is listed among the sponsoring groups. Heading the exhibit committee is William Newberry, of Lincoln Photo-Engraving Co. As in previous years, "Best of the Year" medals will be awared in each of 16 categories, one for small, one for medium and one for large plants.—*J. W. Dragonetti.*

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St. Louis

Candy Gruebbel, Comfort Printing Co., was named Miss Printing Week in St. Louis. She will reign at the Printing Week banquet, Jan. 13 at the Coronado Hotel, and attend the plant tours and the exhibit of specimens and equipment at Stix-Baer & Fuller's department store.

Runners up in the contest were Joan Scheidt, The Daily Record Co.; Mary Ann Maurer, Art Craft Lithographers; Karen Hanson, Corley Printing Co., and Sharon Preiloger, Christian Board of Publication.

Miss Gruebbel was chosen from among the finalists during a dinner meeting of the St. Louis Club of Printing House Craftsmen in December.—*Mildred Weiler.*

•

Houston

Printing Week chairman Conrad Anderson, reports that there will be open house at many plants during the week, a Miss Printing Week of Houston will be chosen and proclamations by Governor Daniel and Mayor Cutrer will be signed. Publicity is being handled by PIA Houston.

Climax to the week's celebration will be the annual banquet Jan. 21 at which Max Clampitt, president of Clampitt Paper Company, Dallas, will be guest speaker. Installation of officers of the Houston Craftsmen Club will also be made at this banquet.—*J. V. Burnham.*

Warner Bros. star Dorothy Provine, Miss Printing Week, examines PW Poster.

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Southern California

Highlights of the 1960 Printing Week observance in Southern California will be the annual banquet at the Moulin Rouge, Hollywood, on Friday evening.

Banquet chairman James Schlegel has arranged the program so that members of the graphic arts profession, their wives, employes, and guests may see the Moulin Rouge show. Dancing will follow.

Highlights of the program will include presentation of the annual Benjamin Franklin award by PW general chairman Irl Korsen. Eight scholarships will be awarded to deserving young graphic arts students; and "Miss Lasting Impression," Jean Moorhead, will be introduced. In addition there will be a drawing for a 1960 Chevrolet Impala, the big prize of the Printing Week Council's annual fund raising campaign.

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Chicago

Chicago's graphic arts industry will observe Printing Week with a banquet in the Conrad Hilton Hotel's grand ballroom, Jan. 21. Over 1,000 persons are expected to participate and head the guest speaker, Alex Drier, nationally known NBC radio commentator. Bert L. Silbar of Kimberly-Clark Corp., was general chairman of the Printing Week celebration and assisting him in arranging the banquet was the recently organized Graphic Arts Information Council, whose members represent more than a score of graphic arts clubs.—*H. H. Slawson.*★

What It Was

By *Roger Callahan*
Wright Offset Plate Co.
Cambridge, Mass.

WE WHO are in lithography earning a living, (and a good one it is, too,) are constantly aware of the ever growing pressures of today. More speed, new ways, rush . . . rush . . . rush, until one wonders sometimes, how the jobs come out as well as they do. This is not a technical piece but an informal talk about the people in our trade. It is dedicated to the men and women who show up day after day . . . year in, year out, getting the work done and out to the customer. Most of them have served their apprenticeship. They know their trade. They are a very important cog in the machinery that makes this United States the great and wonderful country that it is.

We Owe It All To the Excellent Dot

We have one of the very finest printing processes and we owe it all to the excellent printing dot and our ability to control its size and yet keep it sharp . . . crisp and healthy. This, in my opinion, is the secret of lithography's remarkable success.

I remember the time years ago when our boss came enthusiastically back from a trip to New York. Some day, he declared, we would be able to etch the printing dot down 10-20-30-40 or more percent and still keep it crisp and black. At that time the dot was fuzzy . . . rotten and sickly looking. The boss's prediction came true . . . thanks to a lot of research and sweat and the wonderful brain of man — who is never satisfied to stand still but must constantly endeavor to improve his way of life.

As I look back at the tremendous improvements in our trade I am amazed. When I started as an apprentice artist in 1918 the work was all on stone. Lithograph crayon, tusche, hand stipple, Ben Day and sometimes air-brush were all applied to the surface of the stone. We apprentices mixed the tusche each morning in a plate with our fingers. We used distilled water until an Irish kid decided it was too much bother so he stuck his plate under the tap, shrugged and said "How are they going to know the difference?" We followed suit.

The next method was still on stone but it was worked on under water, sometimes called the submarine method. The picture was exposed onto the sensitized stone by carbon lights through a halftone screen and negative. When the artist got the stone he would yell for an apprentice, who seemed at times to have a knack of disappearing when certain jobs came in. We

Author Callahan first discovered "type lice" way back in 1918 when he started work at Forbes Lithograph Mfg. Co., Chelsea, Mass. as a litho artist apprentice. He spent 32 years with the company, interrupted by a short stint at Rust Craft Greeting Card Co. and followed by his present position with Wright. Litho problems not being enough, he decided to take up writing about a year ago.

Like When I Started in Lithography

had to wax the stone . . . put a wax dike around the edge, level up the stone and pour in the water, about one quarter inch deep. If you didn't get the wax on right, the water, of course, leaked all over the place and you got bawled out, but good.

Litho Stones Were Doomed

Then came the H and B method, named after the inventors. It was on glass and the old lithograph stones were doomed. They had to go. Many workers took them home and used them in the garden or lawn or to hold up a crumbling bank. Imagine, walking on stones mined in Bavaria, and with the lithographs still on them. H and B took over for a few years but the dot was not satisfactory and so the present method of dot etching was born.

With this new method, the printing dot, as I mentioned earlier, is the backbone of the business today. It is hard to believe that there will be any drastic improvement.

As in all trades there was the usual amount of horseplay, the little jokes that the more gullible of the apprentices usually fell for. They sent a new boy all over the place for the stone-stretcher, or the paper stretcher or a bucket of halftone dots or cross-harks. I was just as green as the next fellow but I also kept my eyes open. There was a group behind a press at the ink slab and a nice big thick mound of purple ink on it. They were all taking turns at holding their hands close to the ink to feel the heat that they claimed it generated. It sounded crazy to me and it took quite a bit of coaxing on their part until finally I put my hand close to it. Like a flash someone's hand came down to hit mine but I quickly moved mine to one side and his went in up to his wrist. The men howled. The fellow was very cool to me for some time afterwards.

Some of the old timers told me about the jokes they played when they were new in the business. There were those who liked to change from dress shoes into old shoes or slippers at work, only to find them nailed to the floor or filled with wet cotton in the toes. One character was forever talking horses and he talked about them so much that one morning he found a pile of horse manure heaped on his bench.

In the march of progress I have seen many departments go for one reason or another. The most tragic, I think, was the transfer department. There were 12 to 15 men in this room and when there was plenty of work it was quite a busy place. They pulled impressions from the stones and stuck them up on keys for mass production later on the presses. This whole trade went out along with the stones. Later a poster art department went, also a die stamp department. There is something tragic in seeing a man's trade cut out from under him, but business and progress cannot be denied.

Gone are the old timers I used to know with their green eye-shades, their dark sleeve covers and their frocks. They were good craftsmen who took great pride in their work and they were warm and friendly people. Lithography has certainly changed and competition is razor sharp, but it bothers me that the general public hasn't the least idea what lithography is. They have calendars in their homes, color packaged foods and labeled cans on their shelves, framed prints on their walls and cigarette packs in their pockets . . . all excellent examples of lithography. If advertising is good for business then let's advertise, let's wise the public up to the word . . . LITHOGRAPHY.

So here's a toast to the plant owners, the salesmen and office workers and all the rest who do the paper work; but a special toast to the tradesmen: the cameramen, dot-etchers, provers, darkroom workers, artists, strippers, platemakers and pressmen for they are the real lithographers . . . *the men at the bench.*★

A new development in

Percentage Screens . . .

By *J. S. A. Schröder*
Drafting and Reproduction Dept.
Compañia Shell de Venezuela, Maracaibo

THE application of halftone photography in commercial color printing is now an every-day matter, being carried closer to perfection by highly skilled personnel.

The general object is to produce a full range of colors from corresponding densities of only three primary colors (yellow, magenta and blue), and black for added contrast and definition (sharpness).

Offset plates for these basic colors are prepared from halftone separation negatives or positives made from original full-color continuous-tone transparencies, photographic colorprints or original art work.

The introduction of these processes in the preparation of cartographic reproduction work has so far been delayed for various reasons, some important ones being:

1. *Poor definition of line in four-color printing.* (Maps generally contain many linear symbols to express topographical and geological features).

2. *Large size of maps* (correspondingly large halftone screens would be necessary).

3. *Lack of stability in size of large colored originals, affecting the scale of maps and the register of the color separations.*

Colors by Overprinting

When printing maps in colors, overlays may be prepared for each individual shade of color. In this case the printer is handed a model or colorlegend, showing the approximate results desired. The colors for printing are then prepared or approximated by the printer, often each one subject to approval by the author or the draftsman.

It will be understood that the cost of printing is greatly affected by the number of litho plates required and by the number of color changes and runs in register on single or multicolor presses.

The number of plates and runs diminishes when certain shades are arrived at by overprinting two or more transparent colors, which are also used in pure form. Obviously this system does not lend itself very well to the printing of predetermined shades, because the results, even when carefully considered, depend entirely on the original colors used.

Line and Dot Shading Mediums

A step forward toward the reduction of printing time is achieved by the application of shading mediums to the overlays or flysheets. This process is still in general use, both for small and large editions of maps in color. Transparent screens may be obtainable commercially with dot or line patterns and with a protected adhesive layer on the reverse side.

The advantage over the previous system is that colors can be reduced to various shades, which may be overprinted on solid colors or on one another. Although an endless variety of colors may be obtained in this way, several shortcomings and disadvantages of this process soon became apparent:

1. Everything depends on the basic colors chosen. The resultant colors can be estimated only after lengthy consideration, and the results, at the very best, will only approximate the colorscheme proposed by the authors. In fact, the more full colors used, the closer the approximation, but the more expensive the printing.

2. The commercially obtainable screens are not sufficiently quality controlled, and small but important differences are encountered in equal types.

3. Visual differences of common commercial shading media are often determined by differences in the patterns, such as thinner to thicker dots or lines combined with variations in the number of dots or lines per inch. As a result, when overprinting shading mediums, the angle between the screens and the position of the screens will play an important part in the determination of the shade of the resultant color. *(Fig. 1.)*

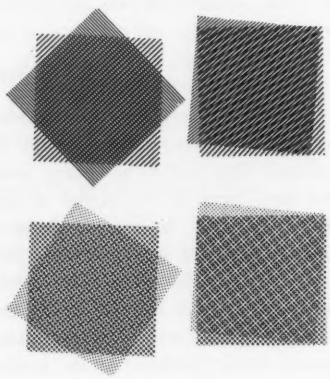


Fig. 1.

Moreover, moiré patterns, resulting from screen angles when overprinting two or more dot or line screens, may become impossible to avoid when an exact shade is needed, because of conflicting requirements for shade and angles. *(Fig. 2.)*

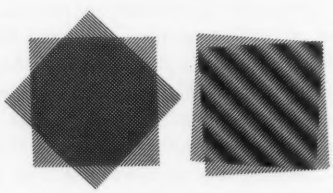


Fig. 2.

4. Choice of screens is limited, because the shading patterns should not be allowed to interfere with the legibility of the map.

5. It is difficult to strip the heavier patterned screens into the exact area required, because of their diminished transparency. The patterns of available colored shading media, although more transparent, are not sufficiently non-actinic for the preparation of litho-plates.

Percentage Screens

The comparatively recent emergence of low-cost percentage screens, when used in combination with extremely stable drafting materials, such as "Astrafoil", permits us today to overcome many of the disadvantages inherent in the previously described systems regarding their application to the offset printing of maps in color.

Pressure sensitive percentage screens are available in tonal values of 10 to 80 percent (of solid) and when applied in a 60 lines per inch value, they are directly reproducible on finely grained zinc and other types of positive sensitized offset plates. The solid (100 percent tone is produced by the draftsman, opaqing the key-line area with india ink or masking paper.

By-passing the photo-mechanical process referred to in the first part of this introduction, the colors desired should be separated into their component shades of yellow, process red, blue and black, and then the resultant percentages of screens affixed to the corresponding areas on the yellow, red, blue and black overlays.

In this manner, a maximum of only four overlays will produce virtually all flat colors desired.

It will be clear that the main obstacle left before putting this process into practice is the manner in which to separate the colors.

Fortunately, we do not deal with a continuous tone process such as mentioned in the first paragraph, nor is this needed for colored maps, because clear distinctions between colors are always required. Also, the percentage screens are available only in the arithmetical sequence of 10, 20, 30 percent, etc., and moreover the intensity or concentration of the primary colors used will greatly influence the resultant solids and tint values obtained. In other words it is necessary:

1. To determine the intensities of the primary colors, and

2. To prepare printed samples of the color tints obtainable by using percentage screens, which will produce certain densities and combinations of the primary colors used.

Intensity of Primary Colors

Although the intensities of colors for maps are subject to the individual taste of authors and draftsmen, the required legibility of linear symbols and names imposes a limit on the greatest intensity feasible (100 percent). At the other end of the scale, the 10 percent screen should produce an acceptable visual minimum of color.

It is recommended the tests described above be started by determining the minimum (10 percent screen) yellow. The corresponding solid printed of this yellow will then determine, by visual comparison, the required intensities of the magenta and blue.

Although much depends on the characteristics of the inks produced by various manufacturers, the magenta and blue used should be prepared in considerably less concentrated form than the yellow, in order to enlarge the available ranges of green and orange tints.

Color	Manufacturer	Transparent White (Littlejohn & Co. Ltd., U.K.) Light	Dark
Chrome Yellow, No. 3225	Van Son, Holland	50%	25%
Process Red	Sun G.P.I. (Fuchs & Lang)	75%	50%
Peacock Blue, No. 3198	Van Son, Holland	75%	50%

In our tests we prepared a series of light and a series of darker color-charts. The inks and the intensities adopted were as shown in the table above.

The actual key to the whole process is finding a method of producing in a fairly economical manner, charts showing all available densities and combinations of densities of the basic colors. The charts should show the percentages of the screens used to arrive at the colors and combinations of colors.

Color-Chart

In practice it should only be necessary to obtain combinations of yellow and red (orange), yellow and blue (green)and red and blue (violet). Overprinting the three basic colors at full strength would give black or near black. Approximately the same effect will be obtained by overprinting the full strength of two basic colors with black. It may be construed that in practice, for the purpose of printing maps, some of the effects of overprinting three color tints can be achieved by overprinting one or two colors with a shade of black. In this way, brown and olive green may be produced, plus darker or more neutral shades of colors and combinations of two colors.

As a result of this theory, the range of colors on the charts was enlarged considerably by overprinting a 10 percent black tint on the light chart and a 20 percent black tint on the darker chart.

In order to avoid the moiré effects when printing color combinations, a 60° angle between the direction of the screens to be overprinted is necessary. If required, the black tint should be applied along the bisector of the angle

. . . for Lithographed Maps

between each combination of colors. *(Fig. 3.)*

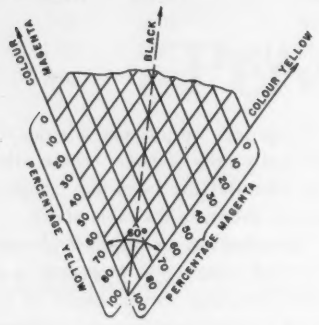


Fig. 3.

Fig 3 leads directly to the figure to to be adopted for the charts showing combinations of colors producible with percentage screens. *(Fig. 4.)*

Fig. 4, although here shown as three separate figures, is actually intended to show the single master to be prepared for yellow, magenta and blue overprints in the three positions required for the chart. *(Fig. 5.)*

The hexagon *(Fig. 5)* will show all possible combinations resulting from overprinting each two tints of three basic colors, using percentage screens. One hundred percent should be added to one side and 0 percent may be added to the opposite side of the diamonds, to show the percentage tints of the individual original colors used .

The master overlay *(Fig. 4)* may be prepared by affixing parallel bands of percentage screens, in which case it is recommended that a complete hexagonal black overlay be prepared, separating the shades of color obtained and with the percentages drawn at the sides of the hexagon.

Instead of the method described above, the bands of screens may be divided in 10 small diamonds each, in order to obtain the chart with each combination of percentages separated by a narrow white band. *(Fig. 6.)*

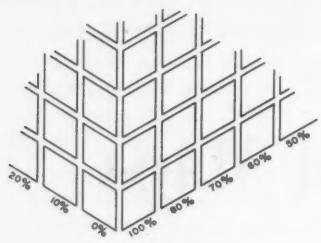


Fig. 6.

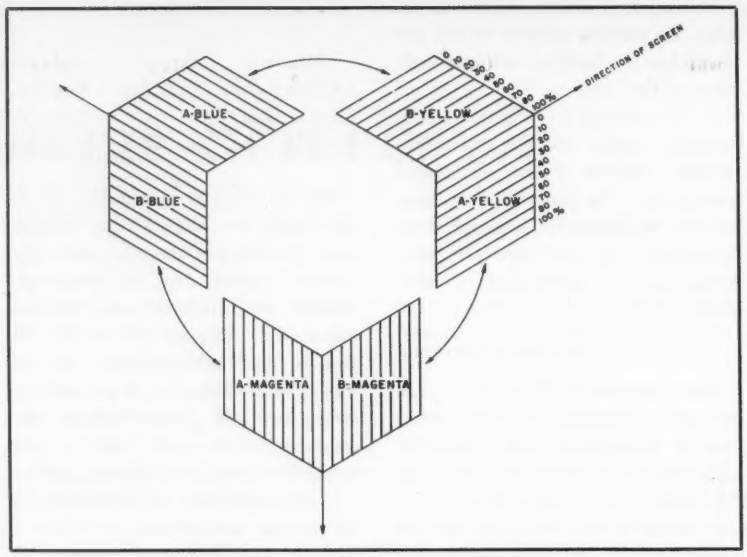


Fig. 4.

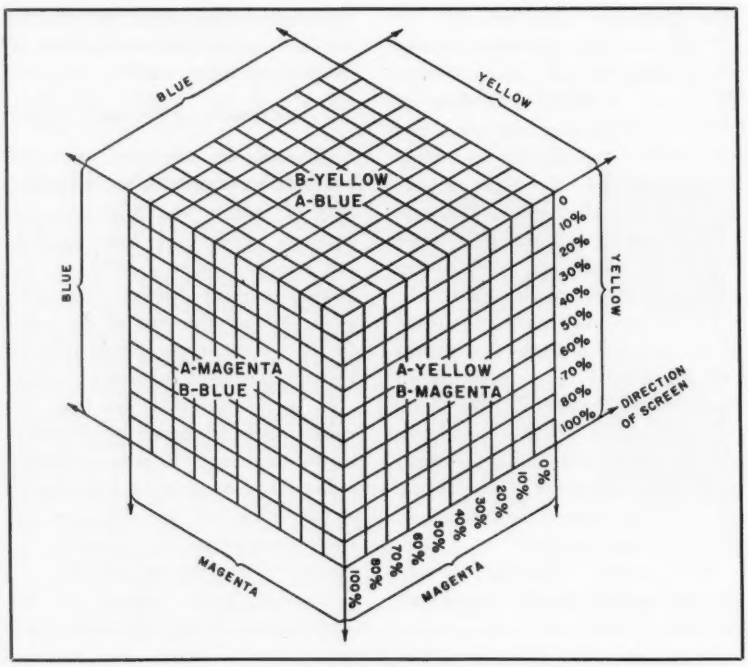


Fig. 5.

Sufficient charts of the primary colors yellow, magenta and blue should be prepared to allow for the preparation of a complementary chart, to be produced by overprinting part of the completed first charts with a 10 percent black overlay for light charts and a 20 percent black overlay for darker charts.

The direction of the screens for the black percentage overlay is shown in *Fig. 7*, which also shows the directions

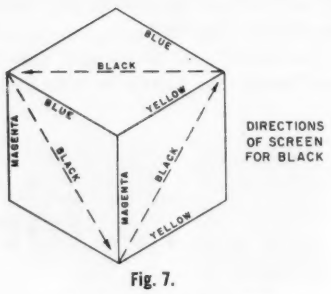


Fig. 7.

(*Continued on Page* 116)

Some things to know about

PAPER

By *W. Keith Gainer*
International Paper Co.

THE printer and the papermaker are the user and producer of a very versatile and seemingly common product; and yet, an extremely complex and fickle one.

Paper is made by tearing apart naturally-produced fibers, as in wood, and rearranging them in a more useable or desirable form — principally a web of paper. Sometimes other materials are added, such as clay, color, starch, rosin, plastics, etc. This web is then put into rolls and sheets. Up to this point, the process sounds quite easy, and basically it is — there are no great secrets about present-day papermaking.

However, this rearrangement of the fibers from wood to paper is not accomplished without some quiet protesting on their part. Under certain conditions the protesting fibers show their irritability to change by swelling or shrinking. This results in the paper stretching or shrinking, having wavy or tight edges, wrinkles, cockles and various out-of-register conditions.

These unwanted conditions all result from the fact that the papermaking fibers are actually little sponges. The air in the paper mill and pressroom also acts as a sponge. Both can hold water, the amount being determined by the relative humidity and temperature of the air. The temperature of the paper is also important as will be explained later.

Figure No. 1 shows the effect of changing temperature on the percent relative humidity. Consider air with an

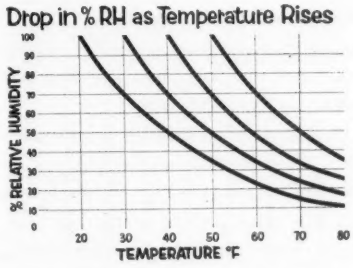


Fig. 1.

outside relative humidity of 100 percent. That means it is holding all the moisture it possibly can at whatever the temperature may be. Let us say 20°, as the first curve shows. Bring the air into the pressroom or warm it up to 50°, and it still will have the same amount of moisture; but the *potential* for holding moisture has increased. It is now about 32 percent R.H. — in other words, it can hold three times as much moisture with that increase in temperature.

> *Naturally, as the temperature rises, the percent relative humidity will drop if the total moisture present remains constant.*

Therein lies the rub. As the relative humidity drops, our air sponge becomes dryer; and, like a sponge, will absorb moisture from any available source. In the pressroom this is usually the paper — waiting to go on the press, or between printings in the case of a multicolor job being run on a single-color or two-color press. This results in so-called "tight edges" and a "baggy center."

Figure No. 2 is an artist's conception of a skid of paper that has been exposed to a pressroom atmosphere

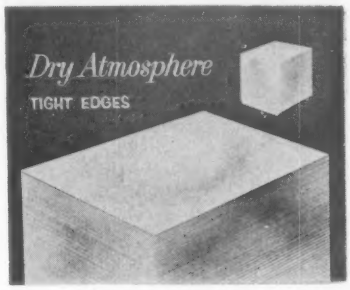


Fig. 2.

dryer than the moisture content of the paper actually calls for. Every lithographer has seen such skids in the pressroom, with the edges of the paper on the skid down, and the center bulked up a bit with a little hump showing in the center.

What Happens On Press

Figure No. 3 shows what can happen when that sheet of paper goes through an offset press. The center hump has to go some place, so it wrinkles up, spoiling the job. The reverse of this is also true. If the relative humidity

GRIPPER EDGE
PRINTED SPECIMENS
SIDE GUIDE
BACK EDGE
Wrinkles formed on Offset Press when running tight-edged paper
Wrinkles usually straight & to rear center

Fig. 3.

should rise above the point at which the atmosphere is in balance with the moisture content of the paper, our paper sponge will absorb moisture from the air. The result of this is the well-known wavy edge effect as shown in *Figure No. 4.*

The center is smooth. Frequently it is depressed and looks like a hole, in fact customers afflicted by this prob-

Fig. 4.

lem frequently say "There is a hole in the center of the skid." The edges of the skid of paper are soaking up moisture from the air because the air is damper than it should be for the moisture content of the paper. Wavy edges are the result.

Figure No. 5 shows what happens when those wavy

Fig. 5.

edges go through the offset press. You get wrinkles, usually going out diagonally toward the back corners.

Basically, then, the problem in running paper is the prevention of wavy edges or tight edges.

One of the causes of the problem, perhaps the major cause, is having a pressroom atmosphere in which the relative humidity is not in balance with the moisture content of the paper. This results in the paper giving off or taking on moisture.

At this point it might be well to review what we know about the problem.

Four Factors

First, it is pretty generally understood that for each relative humidity figure, there is an ideal paper moisture figure. Some leeway can be allowed, but experience seems to show that it is better to have the paper moisture a little on the high side for any given relative humidity, if that is possible.

Second, there is something else we have learned: that the ideal moisture content for each relative humidity condition varies, depending on the stock used for the particular paper concerned. By this, we mean that the ideal moisture for a groundwood sheet at a specified R.H. is not the same as for a 100 percent sulphite sheet. that a kraft sheet has still a different figure, and that the amount of coating or filler are still other variables that affect the paper moisture—relative humidity relationship.

Third, we also know that the ideal moisture content for any given paper will vary depending on whether the sheet is in an ascending or descending cycle of change in relative humidity.

Figure No. 6 shows the curves that result when a sheet is exposed to air at increasing percentages of humidity.

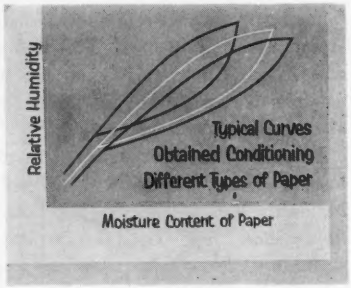


Fig. 6.

As the humidity increases the moisture content of the paper increases and the curve rises. However, when the top point is reached and the humidity is gradually dropped, the moisture content of the sheet drops also but not as low as it was on the rising or ascending curve.

One interesting fact has been noticed in some recent paper tests. If a sheet is put through several cycles of changing humidity conditions and the results are plotted each time, we obtain figures of the same shape but each lies inside the one before. This seems to indicate that the old time printers knew what they were talking about when they spoke of "seasoning" the paper.

The fact that the curve representing each complete cycle lies within the one previous indicates that the possibility of distortion is becoming less.

Fourth, we have further learned that all stocks show this last typical figure when plotted, but the position on the chart changes slightly as indicated by *Figure No. 7.*

This Figure shows the same picture as the last one; but one loop or curve could be a groundwood stock, another could be a sulphite stock, a third a 100 percent kraft or sulphate stock. The picture is the same. The position on the chart is different. Not all stocks are in balance at the same relative humidity with the same

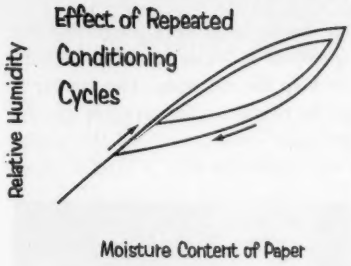


Fig. 7.

moisture content. This varies, depending on the type of stock, percentage and type of filler or coating, etc.

In order to avoid confusion, no exact indication is given of the type of stock for each curve. For the same reason figures have not been put on some of the charts. A great deal of the foregoing, while technically interesting and correct, may not affect actual production very much because there is a good chance that various changes will counteract one another to the benefit of everyone concerned. These are merely things that the paper industry has learned about the problem.

R.H. of Pressroom

However, printers and lithographers have problems, perhaps the most important being the relative humidity of the pressroom.

You are all familiar with the humidity figure reported by the Weather Bureau daily — even hourly. This figure is an outdoor reading and is greatly affected by temperature.

Referring back to *Figure No. 1*, assume an outside humidity of 100 percent and temperature of 30°F. — cool, damp outside air. Bringing this air into the pressroom and heating it up to 70°F. without adding any moisture, lowers the air to about 22 percent relative humidity — much too dry for most paper. This dry air starts to absorb moisture from any convenient source — usually the edges of any open skids of paper or skids of work in process. The result is tight edges and possible wrinkles.

If these outdoor readings were reasonably constant, it would be bad enough. What makes the situation worse, however, is the extreme variation found, not only from day to day, but in any 24-hour period.

Figure No. 8 is a bar chart showing the extreme reading during each one of six months throughout the year 1958 in New York City.

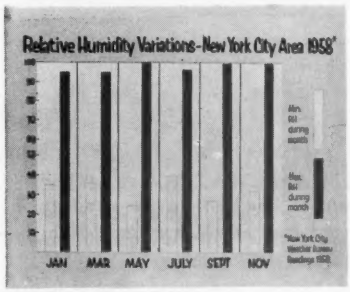


Fig. 8.

This is made up for six months to simplify it. The first bar in each monthly space is the minimum humidity on one day during the month. Taking May for example, the minimum relative humidity is about 22 to 23 percent. That is the outside reading. During that same month, there was one day at least, and there may have been more, when the reading was 100 percent R.H. Thus we can see the extreme for May or for each of the six months shown.

Figure No. 9 shows the maximum range from low to high during one day of each of these months. Taking May again, it shows us that on one day during the month there was a minimum R.H. of 34 percent and a maximum of 93 percent or almost 60 percentage points variation in one 24-hour period.

Fig. 9.

These last two figures show the magnitude of the problem facing the average lithographer. There are two things that he can do to help out: *humidification* and *air-conditioning*.

Spray Humidification

Spray humidification is useful during the regular heating season when heated pressrooms normally have a dry atmosphere. Complete air-conditioning, on the other hand, is beneficial the year around.

As far as comparative costs of various humidifying and conditioning systems are concerned, it would be best to consult a qualified engineering representative of any of the several equipment manufacturers. There is one paper-mill installation with a total cubic volume in the sheeting and finishing rooms of 300,000 cubic feet. The total cost of equipping these rooms with spray humidification was about $7,000. Twenty-one spray units were used for the complete installation.

This included sufficient spray units to maintain an atmosphere of 50 percent R.H. Automatic regulation was also included that would start and stop the sprays as the humidity varied from the desired point. Any number of individual spray units can be installed and there are several different systems (some use air and water, others use steam). Each has its advantages.

As a starting point on a program of printing plant conditioning, it might be wisest to look into humidification first. The operating costs are reasonable. A good installation can be so arranged that the units go on and off automatically as the relative humidity varies from the desired point. A tolerance of plus or minus 3 percent R.H. should be allowed. As many separate units as are

required can be installed. If it is found that more are needed, or would be useful, than was originally estimated, they can easily be added. Naturally, in the colder and drier sections of the country more units may be necessary.

Complete Air-Conditioning

Complete air-conditioning is another matter, and involves considerably greater initial investment. The original and operating costs of complete air-conditioning are fairly high, comparatively speaking, and very careful investigation should be made before a definite commitment is entered into for installation.

It is almost impossible to give any cost figures on air-conditioning that would apply to all plants. Each case and each plant is different, the type of building construction, number of windows, doors, etc., amount of insulation, geographical location are all factors to be considered. The services of a qualified air-conditioning engineer are absolutely needed.

There are several other advantages to be gained by the printer when the pressroom is humidified or conditioned. At 40 to 45 percent R.H., static problems are lessened or eliminated. This improves both press feeding and delivery. Elimination of static is also helpful in the sorting and inspection rooms of label printers and will speed up all such hand operations. Color printers will find it easier to maintain close register. A controlled pressroom is also a healthier and more pleasant place in which to work.

To illustrate more clearly the importance of controlled atmosphere, I can quote a specific case of a typical high-quality uncoated offset sheet. This paper was received by the laboratory and measured, dimensions being as follows: 40 x 60″, basis weight 25 x 38-60, grain long. It was then conditioned in stages from 24 percent R.H. at 70°F. and back down again. A maximum change of just over one-quarter inch was found in the 40-in. dimension. This means that a change of 55 percent R.H. caused the paper to stretch and then shrink again close to ¼″ or about .625%.

When we consider that customers complain about register being out less than 1/32 of an inch and we know that we can have a change of 55 percent R.H. in one day, it is easy to realize what causes many printers to have gray hair.

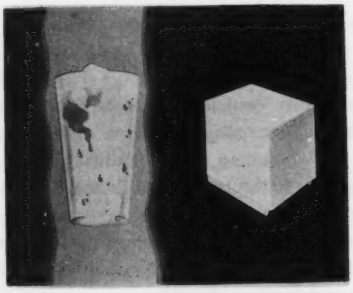
It is this factor of stretch and shrinkage that causes the back edge of the printed sheet to be out of register at times while the front edge is perfect. The out-of-register condition caused by this loss or gain of moisture becomes progressively worse from the gripper edge to the back edge.

There are several mills in the North with humidified finishing rooms and I know of one mill in the South producing a quality line of business papers that considered it worthwhile to completely air-condition and humidify their finishing room in order to help eliminate one headache of their printer customers.

This information, no doubt, is all very interesting but the really important question is — can anything be done at a reasonable cost to help the situation. The answer is "yes". There are things the printer or lithographer can do.

First there is temperature conditioning of the paper. *Figure No. 10* shows the reason for this. A skid of paper

Fig. 10.



which has been exposed to low temperatures long enough becomes thoroughly chilled. If this cold skid is then brought into a warm pressroom it will cause the same reaction as the ice-cubes in a waterglass.

The warm pressroom air within a few inches of the paper is chilled. Lowering the air temperature raises the relative humidity of the air until finally the saturation point is reached and moisture will condense on the sides of the skid the same as it does on the sides of a glass of ice-water. If the skid has been unstrapped and unwrapped, the condensed moisture will be absorbed by the paper on the skid, causing wavy edges and wrinkles if the paper is run on the press.

In order to avoid this problem, it is important that skids of paper should remain unopened until they have come into temperature balance with the pressroom air.

Figure No. 11 gives approximate times for holding paper in the pressroom before it is opened. It should

Fig. 11.

SKID PAPER **Temperature Adjustment Table**

TEMPERATURE DIFFERENCE—PRESSROOM & PAPER

CUBIC VOLUME*	If difference is: 10°	15°	20°	25°	30°	40°	50°	60°
	Paper should stand unopened for:							
6 cu'	6 hrs	9 hrs	12 hrs	16 hrs	20 hrs	28 hrs	38 hrs	54 hrs
12 cu'	9	14	18	23	29	40	54	78
24 cu'	12	17	23	28	35	48	67	100
48 cu'	16	21	27	32	40	57	80	110
96 cu'	17	23	29	36	44	60	84	115

* CUBIC VOLUME = $\frac{\text{LENGTH} \times \text{WIDTH} \times \text{HEIGHT}}{1728}$ (all in inches)

not even be unstrapped. That will help with this "ice-cube" condition.

Six Practical Tips

1. To use this chart, first determine the difference in temperature between the pressroom and the paper. This can be done by making a small slit in the wrapper on one side of the skid and inserting a thermometer in the same manner as a "sword" test is taken.

Take the nearest or next largest cubic volume figure on the left hand side for the cubic volume of the skid

(*Continued on Page* 119)

"CRONAR® FILMS HAVE INCREASED OUR PRODUCTION BY 25%, SAVE MORE THAN 60% ON JOBS THAT ONCE REQUIRED GLASS."

—Mr. Charles Packard, President, Art Lithocraft Co., Kansas City, Mo.

Art Lithocraft Company produces about 35,000 square feet of plate area annually. "Most of our work," explains Mr. Packard, "involves three and four color jobs, although we handle six and eight color process plates, too. We've found that no other film can equal CRONAR for dimensional stability. Many plates are made on step-and-repeat machines where film is subjected to intense heat at regular intervals. We can tolerate only .001" dimensional change on some jobs, but we have no trouble maintaining these standards with CRONAR Films. At present we use CRONAR Pan Litho for direct screen separations and also CRONAR Pan Masking, CRONAR Transparency, CRONAR Reflection and CRONAR Ortho A. Because these films are so easy to handle, we've increased our production by as much as 25% to 30%.

There's a CRONAR Graphic Arts Film to cut costs and increase your production, too. Contact your Du Pont Technical Representative for more information. E. I. du Pont de Nemours & Co. (Inc.), Nemours 2430-A, Photo Products Department, Wilmington 98, Delaware. In Canada: Du Pont of Canada Limited, Toronto.

Mr. Charles Packard, left, discusses the space-saving advantages of CRONAR Films over glass plates with Du Pont Technical Representative John S. Wigginton, Jr.

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Better Things for Better Living . . . through Chemistry

How photographer, supplier decide on

Product Performance

for sensitized lithographic materials

By *Ira B. Current*
Manager, Standards Dept., Ansco
A Division of General Aniline and Film Corp.

MODERN sensitized materials for photography feature such a degree of uniformity and reliability that modern photographers seldom feel compelled to give any attention to these requirements of their medium. It is remarkable that this is also true about the materials used by those in the photolithography field when one considers the inherent high contrast of the "lith" type films, and the consequent small latitude for error.

When working with photolithography films, we are dealing with a light sensitive product that is expected to respond accurately to controlled amounts of light. Yet, because of its chemical makeup it is also sensitive to the vagaries of developing temperature, time and strength as well as the relative humidity of the surrounding air; not to mention the effects of age dating from the time the emulsion is made.

Yet our film factories must be able to define the products they are making — in terms understandable to the emulsion chemists, as well as to the quality control people; and the sales force — who in turn must know what it is selling to the artisans in this great field. This common denominator is the finished product specification — a definition for each product — in all its dimensions, photographic and physical, just as precisely and as accurately, considering the fleeting nature of the photographic products involved, as the material and parts used in any of the more simple manufacturing processes.

From a talk presented at the NAPL convention, Hotel Muehlebach, Kansas City, Nov. 18-21, 1959.

Ira B. Current

I would like to tell something about how we at Ansco go about establishing finished product specifications.

Coating Wet Plates

As recently as two decades ago, many graphic arts workers coated wet plates and sensitized them, in a manner not too far removed from that of Brady and his contemporaries who made thousands of continuous tone wet plate negatives during the Civil War. It is not hard to recall the deposits of collodion around an old wooden sink where the plates were flow-coated prior to sensitizing. In many of these establishments, the specifications were carried in the platemaker's head, although the manufacturers of his raw materials, such as collodion solution and silver nitrate, did adhere to strict finished product specifications such as those about which we will be talking.

The wet-plate maker made small modifications in a technique he was taught as an apprentice by a journeyman, to produce results he was told were necessary to meet the requirements of the shop; requirements that made this part of the process dovetail with the remainder of the platemaking process.

It was techniques such as this, handed from one generation of craftsmen to another that formed the basis for the first dry-plate product requirements—later standardized into finished product specifications in some form. These specifications, in turn, formed the basis for the photographic requirements of the first films for line and halftone work.

With the advent of the films, every effort was made to carry over the essential requirements of plates, and manufacturers were compelled to strive for a minimum of dimensional change during the photographic processing, and freedom from any objectionable curl tendency; yet the product had to be free from the weight, bulk and brittleness properties of the glass plates. There were other economies of both cost and performance to be found in the newer films.

Thus, with the availability of a material with a new physical form, many of the existing use requirements had to be incorporated into the specifications. Several undesirable ones could be eliminated, and new, desirable features were added.

Conflicting Advantages

But further modification of the product may be of conflicting advantage over the previous products. One method of working might not tolerate an increase in emulsion sensitivity because short exposure would lead to

inaccuracies in timing, or higher sensitivity to fog under the required safelamp brightness. Yet, another plant might be pressing for a more sensitive product because of the man-hours saving that would be realized. The decision as to which way any improvement should be made, or whether or not more than one product would be required, would call for a very careful appraisal of the sales potential — whether or not more than one product can be supported — the technical possibility of producing the new product, and the possible consumer difficulties to be expected from a modification of familiar characteristics.

In some cases, an improved product represents a saving to the user indirectly in the form of improvement in shop technique; in others the cost of the product is less, and it is thus more economical; in still others, the improvement may mean economy through the elimination of waste. However, in some cases these savings can be shown to be the economy to be gained through standardization on a single ideal product.

Large shops are familiar with the advantages of standardized techniques designed around such an ideal product. To disrupt such an organization through the introduction of a modified product of unproved advantages may not be in the interests of good consumer relations for the manufacturer.

Setting Performance Requirements

From this background I shall try to show how the performance requirements of a given product are established. First, there must be a general understanding of the process involved. This may be gained through a review of available literature, through frequent visits to various shops, or conventions and meetings to see and hear the working methods and requirements in use. Field representatives return to the factories with their observations, and the users of the materials themselves may advise changes in the products that they would like to see incorporated. To keep abreast of trends in product changes and requirements, a careful study is continually made of competitive products — to the extent of sometimes running a kind of quality control chart on some of them.

However, it may turn out that what is wanted may not really be good for those who desire it, because of the inflexibility of their working conditions. I have already made reference to the fact that increased sensitivity might be sabotaged by higher safelamp sensitivity. Non-standard processing temperatures (standard, perhaps, in a given shop) may lead to stripping problems. Or some desired photographic characteristic may not be compatible with the limitations of drying time; just to mention a few.

So far, we have been talking in rather vague terms. All the characteristics of a given product must be defined and set down quantitatively in our specifications. We learn that a film gives just the right dot or line structure with a given camera set-up. This correlates with the findings of several other shops. By means of sensitometry, we can plot a characteristic curve, and a study of its toe characteristic tells why the dots are firm without any sign of soft edges. By conducting a few modifications of development, we are able to associate changes in the curve shape in the toe region with a fall off in performance in the dot structure. This serves to establish limits beyond which the sensitometric characteristics must not deviate, using standard processing techniques and employing proprietary chemicals.

The same characteristic curve gives a measure of the speed, or over-all sensitivity of the film, simply by the position it assumes on the exposure axis. Spectral sensitivity is roughly given by the wedge spectograms, and more precisely determined by the spectral sensitometer. This characteristic is correlated again with camera performance.

Other Film Products

Other properties of the film must be specified: dot etching requires a practical performance test—for which there is often no adequate substitute — but the performance can be given numerically on the basis of time required for the dot to go blind, relative to the percentage change in dot size.

The requirements for physical performance have become more demanding as shops become larger, and procedures have become more standardized.

The curl characteristics of the film will influence performance in vacuum backs, will be affected by processing techniques, and will sometimes influence mass processing methods. Curl is measurable before, during, and after processing. Referring to the practical requirements, the curl characteristic can be specified and tolerable limits set.

Another property is stiffness, or the "bendability" of the film. A by-product of this measurement is the resilience, or "limpness" of the film. The coefficient of friction of the film may have an important bearing on machine performance. Thickness must also be considered, for there are roll-film cameras, and thickness governs the size of a roll of a given length. Thickness also enters into consideration of the film that is to be contact printed onto another surface through the base.

Optical characteristics of the base, index of refraction, for example, as well as the spectral absorption—color —must be specified, for photo-lithography processes can be attenuated considerably by spectrally selective absorptions in their primary regions of sensitivity.

Problem of Uniformity

One characteristic that is applicable to all of the others is that of uniformity. We have mentioned limits beyond which the performance of any given characteristic begins to fall off. Superimposed upon this is the requirement that even though the change is such that performance does not immediately suffer, too great a variation cannot be tolerated because of the shop limitations under which it must be handled.

While identical pictures can be made on two films varying a stop in one characteristic—speed—by adjustment in exposure time, such a variation without warning could result in complete failure at one of the extremes when applied to a material with a gradation in the vicinity of six or above.

However, there are limitations in the sensitized materials manufacturing process. While he would like to make

(*Continued on Page* 123)

Department of Commerce figures show

Litho Still Gaining Fastest

LITHOGRAPHING made a big jump beyond the $1 billion mark between 1954 and 1957 and continues to outgain the rival graphic arts processes in percentage growth.

From 1954 to 1957, according to figures released last month, value of shipments in the litho industry rose from $999,112,000 to $1,318,597, an increase of $320 million and a percentage jump of 32.

Letterpress, gravure and screen process, during the same period, went from $2,157,278,000 to $2,703,359,000, an increase of $546 million, or 25 percent. Greeting cards, estimated to be about 90 percent offset, rose from $184,988,000 in 1954 to $234,402,000 in 1957, a $49 million increase, or 27 percent.

These figures are contained in an economic summary of the printing and publishing and allied industries, released in December by Horace Hart, director of the Printing & Publishing Industries Division of the U. S. Department of Commerce.

Actually, while the percentage increase for the lithographing industry is quite healthy (averaging 10.6 percent increase a year, and leading all other categories in the breakdown) it must be remembered that the industry has a much smaller base than commercial printing (letterpress, gravure and screen process), and the yearly gains, in terms of dollars are less. These gains in value of shipments were made by other industries, (1957 over 1954) as reported in the Census bulletin: Book Printing, 20 percent; Bookbinding, 28 percent; Blankbooks, 29 percent; Loose-leaf Binders, 29 percent; Typesetting, 21 percent; Engraving, 11 percent; Photoengraving, 23 percent; and Electrotyping and Stereotyping, 7 percent.

The Economic Summary (Vol. 1, No. 6) also covers changes in number of production workers and average weekly earnings in the various industries, as shown, in part, in the accompanying tables. Total employes in greeting cards were about the same in July, 1959 as in July, 1958. Commercial printing registered a 2.1 percent gain and lithographing, 1.1.

Average weekly earnings increased in all three categories, with the biggest rise in greeting cards.

The leadership of lithography in percentage gain continues from the last previous report, covering 1954 and 1947. In that seven-year period, litho led all other categories with an increase of 106 percent.★

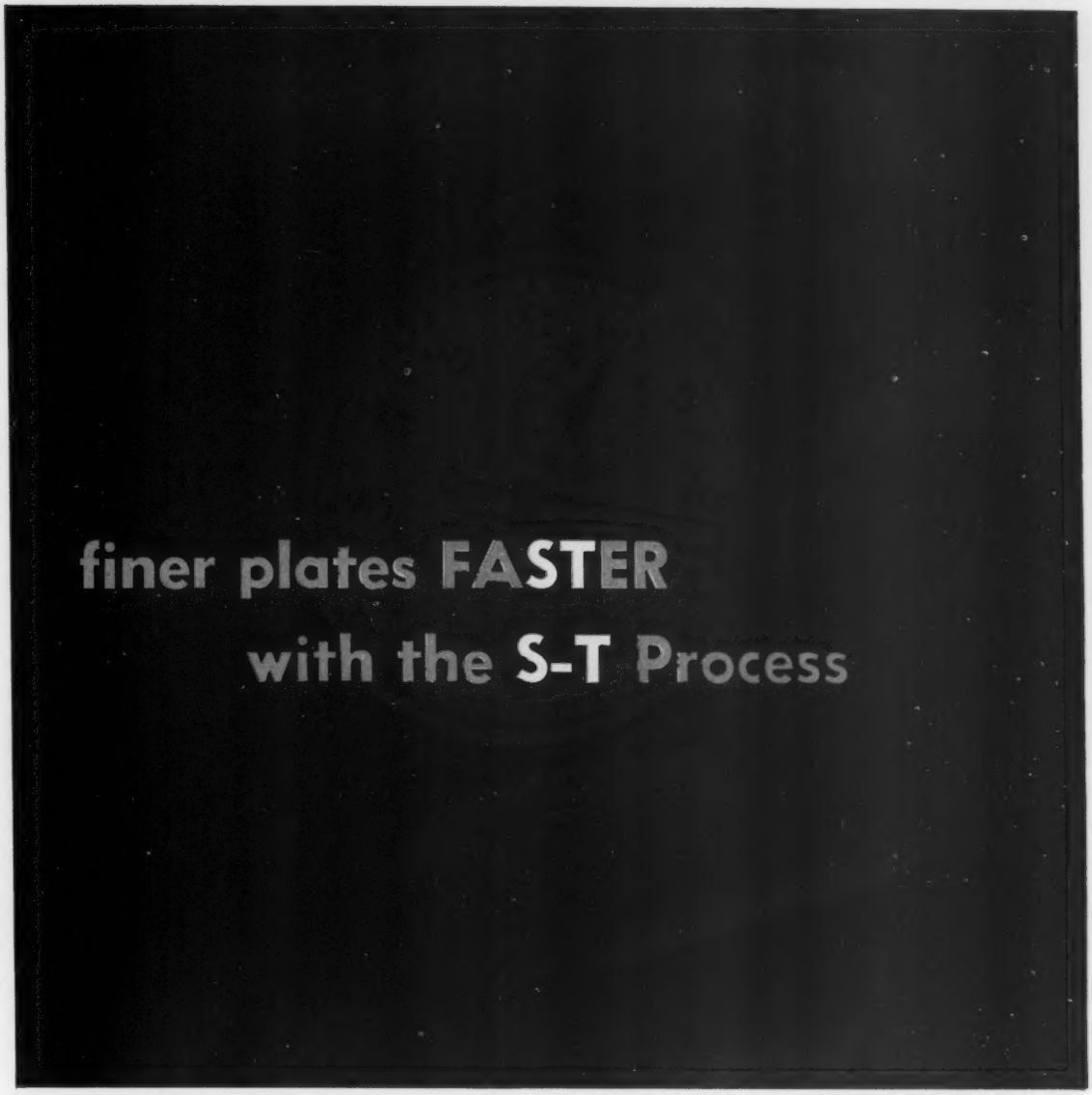
How Three Processes Have Gained

Class of Products	Value of Shipments (thousands of dollars)			Percent Change	
	'47	'54	'57	'47/'54	'54/'57
Lithographing	$485,081	$999,112	$1,319,597	+106	+32
Letterpress, Gravure and Screen Process	1,503,729	2,157,278	2,703,359	+44	+25
Greeting Cards	107,716	184,988	234,402	+72	+27

Average Weekly Earnings

(Production Workers)

Process	July '59	July '58	Percent Change
Lithographing	$107.98	$100.23	+7.7
Commercial Printing	102.44	97.11	+5.5
Greeting Cards	71.16	63.58	+12



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PRODUCTION CLINIC

Keep the Pressure at a Minimum

By *Frank Arbolino*
Dexter Press, W. Nyack, N. Y.

THE importance of using a minimum amount of pressure in offset printing is strongly emphasized. With that basic principle in mind we should consider the many types of stock that are being used in lithographic reproduction. Mechanical adjustments and ink manipulation are two factors that demand attention and study if we are to obtain good results with various kinds of paper.

It should be remembered that coated papers and all hard-finished stocks require extreme care in makeready. Also, we must bear in mind that clay finished stock has more tack than regular offset papers. Thus, the first step is to obtain a blanket free from tack. If two blankets are available for each press, always try to use first the blanket that has been reconditioned and rested. Washing solutions of a highly evaporative nature are best for blankets when running a hard-finish stock. Adding a few ounces of a cleaning agent to make up one gallon of blanket wash will be helpful.

Before pulling any impressions, the point of printing contact must be established between plate and blanket cylinders. Don't take it for granted that all you have to do is move the indicator on the impression cylinder to change from one stock to another. Actually, you will benefit by making this check before starting an important job.

It is generally understood that paper, when passing between cylinders under pressure, will fan out or stretch in width. This condition can be aggravated if pressmen overlook the fundamental principle of guides or stops on the press. If a sheet that has fanned out can be brought back into register by moving the stops, the same principle can cause a sheet to be thrown out of register if the stops do not conform to the contour of the gripper edge of the sheet. In other words, if the paper is cut and squared properly, all the stops on the press should be set against the cylinder edge. In years gone by, extra trimming of paper was general practice for good register, but there is very little of it done today.

When stock shows a tendency to fan out and the sheets must pass through the press two or three more times, regulating the stops from the start of the job may help. This is an intricate procedure and must be done with very thin shims or pieces of paper. Starting from the center and working toward both ends of the press, each stop should be shimmed slightly more than the next one to give the sheet a concave edge when laid in the grippers. This will make the image print short across the sheet, and if the paper should fan out it can be brought in again by simply setting the stops back to the cylinder edge. Then if the paper should fan out still more in succeeding colors, the stops may be underlayed or shimmed in the reverse manner.

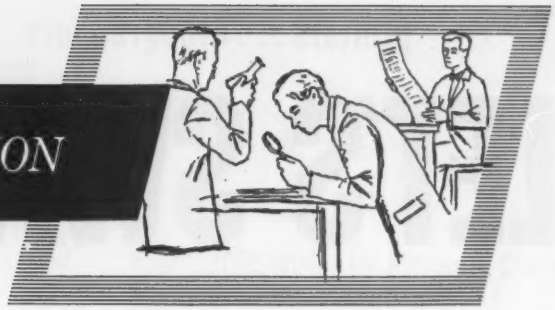
To sum up, I would say that very little distortion or fanning out will occur in printing if all the stops on the cylinder touch the sheet with the same tension.

On presses with three-point register this problem must be approached in a different manner. Since there are only two points of register on the gripper edge of the sheet, the squaring of the sheet is less important. It is, however, very important that the sheet be perfectly flat on the feeder delivery when the grippers on the press cylinder close and take the sheet. The slightest bulge or distortion at this time will cause misregister of some portion of the sheet. On presses where the feeder tapes are suspended over a large area the mere flapping or chatter of the tapes along the back edge of the sheet can cause fanning or misregister to some extent. Here again, the image takes form on the paper according to the position of the sheet when placed into the guides and grippers. All adjustments should be taken care of at the start of the job, for any changes made between the printing of colors may cause misregister.

To compensate for any fanning out it is necessary to "bustle" the sheet by raising the center of the back edge. As the sheet lies in the guide at the time the cylinder grippers close, the bustle at the back edge causes the front or gripper edge to form an arc, which is convex. The re-

(*Continued on Page* 123)

TECHNICAL SECTION



Determination of Water in Alcohol

An uncomplicated procedure for detection and determination of water in alcohol used for the deep-etch process, for use in the litho shop by personnel who have little or no chemical knowledge. No elaborate, costly instruments necessary.

By *Robert F. Leonard*
Litho Chemical & Supply Co., Inc.

RECENTLY our sales department presented the laboratory with a problem which appears to be universal in the lithographic field. They had requested a simple, in the shop, chemical test for the determination of harmful amounts of water in alcohol used in the deep-etch process.

The request appeared to be of such a routine nature that it was assumed that a cursory literature search would provide the desired information. However, the usual search of technical literature from the graphic arts field failed to give the expected results. Subsequently, a complete search of the world's chemical literature dating back to 1918 was undertaken through the use of *Chemical Abstracts*. Several methods for the determination of water in alcohol were found but all of them had one or more of the following disadvantages:

1. *The need for complex and expensive instruments,*
2. *An unreasonably large quantity of alcohol, or*
3. *Extensive chemical knowledge.*

Since applicable information could not be acquired from published articles on chemical subjects, it was necessary to investigate more fully the mechanism of the problem and then construct a logical approach.

An explanation should be made at this point as to the importance of using anhydrous (water free) ethyl alcohol for a plate wash. The alcoholic plate wash has two functions:

1. *To remove the salts left on the plate by the developer, etch and copperizing solutions, and*
2. *To remove by evaporation the water left on the plate by the above mentioned aqueous solutions.*

As will be described in detail below, only relatively water free alcohol can effectively remove water from the plate surface.

Why Water-Free?

The answer to the question "Why must the alcohol be relatively water-free to work effectively?" lies in the fact that ethyl alcohol, which contains 4.5 percent or less water will evaporate with the water, leaving a dry surface behind. Conversely, an alcohol solution containing more than 4.5 percent water will not evaporate uniformly, and this will result in water being left on the plate surface after the alcohol has evaporated. Some shops have adopted the practice of substituting 99 percent isopropyl alcohol for anhydrous ethyl alcohol. Pure (100 percent) isopropyl alcohol has the property of being able to contain a maximum of 9 percent water before the water-alcohol evaporation balance is upset. Therefore, 99 percent isopropyl alcohol (isopropyl alcohol is not commercially available in 100 percent purity) can "pick up" 8 percent by volume of water and remove it from a plate surface by evaporation.

Both ethyl and isopropyl alcohol are hygroscopic. This means that they pick up water vapor from the air when left exposed to the atmosphere. Since it is not always possible to keep alcohol completely airtight between uses, it is logical to assume that the alcohol in question will constantly be increasing in water content. As a result of this phenomenon, it is necessary, especially in periods of high humidity, to periodically determine whether the alcohol has picked up an excessive amount of water.

The use of an alcohol which contains an excessive amount of water will result in the water from the deep-etch solutions remaining on the plate surface. This situation will greatly increase the possibility of one or all of the following conditions: (1) the deep-etch stencil will become soft and tacky, (2) water will lie in the pits of the grain, (3) gum will be dissolved out of the stencil and redeposited on the bare metal image areas. The above conditions will result in a plate which has either "penetration" or a "blind" image or both.

(*Continued on Page* 114)

printers . . . lithographers . . .

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H. Wayne Warner, ass't production manager
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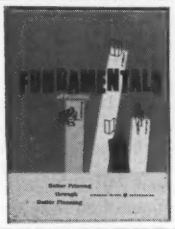

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Photography, Tone and Color Correction

EXPERIMENTS IN COLOR VISION. Edwin H. Land. *Scientific American*, Vol. 200, No. 5, May 1959, pp. 84-94, 96, 99, 13 pages. The classic color theories developed by Newton, Maxwell and Helmholz are reviewed, followed by a description of the author's experiments which appear to deny the classic theories. Basically, the author's method is to photograph a colored scene through two filters (red and green) for longer and shorter wavelengths. When the monochromatic transparencies are projected and superimposed, using practically any pair of wavelengths of light, a colored image results; true color if the longer wavelength transparency is projected with a longer wavelength band of light and the shorter with shorter. However, one of the bands can be the full range of white light. An extensive analysis of the phenomenon follows.

THE PHOTOMECHANICAL HALFTONE. (Part II from the book of the same title.) Louis Walton Sipley. *The Lithographer's Journal*, Vol. 44, No. 2, May 1959, pp. 11-4, 4 pages. A historical review covering the late 19th century, including the work of the Levy brothers on the halftone screen, some on the work by Klic on gravure, the work of Horgan and the Leggo brothers on the newspaper halftone, the Metzograph screen, and some early work on color.

THE PHOTOMECHANICAL HALFTONE. (Part III and final installment of the book by the same name.) Louis Walton Sipley. *Lithographer's Journal*, Vol. 44, No. 3, June 1959 pp. 12-14, 3 pages. This installment carries the halftone process into the 20th century and into common usages in printing, in color, in lithography and in gravure. Some newer processes are mentioned: the Gardner intaglio halftone process, powderless etching, the contact screen, autoscreen films and electronic engraving (Fairchild, Klischograph, etc.).

IMAGE REVERSAL SYSTEMS. HOW TO WRONG RIGHTS WITH PHOTO-REPRODUCTION AND OPTICAL SYSTEMS. Herbert P. Paschel. *Photo Methods for Industry*, Vol. 2, No. 6, June 1959, pp. 50, 52, 2 pages. A short discussion of the lateral reversal of photographic images. The commonly used method of turning over the film in contact printing, and the use of a prism over a camera lens are described and their shortcomings pointed out. Multiple mirror systems are mentioned. A diagram explains the Klimsch system having a camera front with the lens supplemented with mirrors giving three combinations: 1. With two plane mirrors to give the equivalent of lens alone and a normal image. 2. With one mirror and a light for a flash exposure. 3. With one plane mirror on one side of the lens and split mirror on the other side to give a laterally reversed image.

DIMENSIONAL STABILITY; NEW BASES COMPARED WITH THE STANDBY, GLASS. Herbert P. Paschel. *Photo Methods for Industry*. (In Reproduction and Graphic Arts), Vol. 2, No. 7, July 1959, pp. 32, 34, 74, 3 pages. Figures are given on length changes in a 30 in. length for a 20°F. temperature change as follows: Glass, 0.003 in.; Cronar, 0.009 in.; vinyl or polystyrene, 0.020 in.; tri-acetate, 0.018 in. For the same length and an increase of 20 percent in relative humidity the increases are: glass, 0.000 in.; Cronar, 0.0085 in.; vinyl or polystyrene, 0.0085 in.; tri-acetate, 0.036 in.

REPRODUCTION TO ACCURATE SIZE, BY SCALE FOCUSED AND AUTO-FOCUSED CAMERAS. Part II. Frank H. Smith. *Modern Lithography*, Vol. 27, No. 7, July 1959, pp. 39-40, 102, 3 pages. Beyond a normal accuracy (0.1% is mentioned) greater accuracy costs money and effort. On lenses and sharp focus: an apochromat may sacrifice something in critical definition and flatness of field (in monochrome) to gain color corrections. Investigation of a good anastigmat, or even rapid rectilinear is suggested. For test purposes, a fine-grain film and fine-grain development is suggested. The Ives two-hole stop focusing test is described. A slanted film method for setting scales and checking size is also given.

WHAT'S NEW IN PHOTOGRAPHY? John M. Lupo, Jr. *Modern Lithography*, Vol. 27, No. 7, July 1959, pp. 43, 107, 109, 3 pages. Advancements in new equipment include cameras with electrically operated accessories, special masking backs, automatic film processing, gas bubble agitation, and temperature controlled sinks. In products: liquid fixers, stable base films, and improved film emulsions. In lighting: strobe lights and color temperature control. In processes: new procedures for masking and color correction, camera back masking, negative color films, and growth in the use of electronic color scanners.

BETTER HALFTONES WITH THE MAGENTA CONTACT SCREEN. Charles Roeder. *Graphic Arts Monthly*, Vol. 31, No. 7, July 1959, 66, 70, 72, 74, 76, 6 pages. The latest procedures for using the magenta contact screen are presented in a step-by-step review. The only extra equipment required is the filtered "flash" lamp. An accurate lens diaphragm scale is necessary. Complete instructions are given for exposure in camera and flash for various degrees of reduction and color of copy. Drop-out and long-scale halftones are also explained.

REPRODUCTION TO ACCURATE SIZE. Part 3. SOME TESTS AND CALCULATIONS. Frank H. Smith. *Modern Lithography*, Vol. 27, No. 8, Aug. 1959, pp. 46-8, 3 pages. The

use of a calculating machine is suggested for the calculations. The three basic optical formulas involving image and object distances, focal length and magnification are given and examples worked out to show their use.

HARNESSING THE POTENTIALS OF PHOTOTYPOGRAPHY. Carl P. Palmer. *Graphic Arts Monthly*, Vol. 31, No. 8, Aug. 1959, pp. 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 10 pages. Some terms are first defined. Phototypography uses phototypesetting, etc. to prepare material for photomechanical processing into plates. Its scope is shown in outline form and explained in some detail. Six advantages of phototypography are listed, also eight examples of where it should not be used. A table gives points to consider when deciding whether to use metal typography or phototypography.

Planographic Printing Processes

NEW OFFSET PLATE SURFACING PLAN. Stephen W. Gibson. *Inland and American Printer and Lithographer*, Vol. 143, No. 4, July 1959, pp. 42-3, 2 pages. As a part of the techniques of Army Map Service mobile shop printing of maps, the plates are grained with a modified small commercial twin-brush floor polisher. Nylon bristles extended the life of the brushes ten fold. Fatigue was within satisfactory limits with 40 plates per 8-hour day. Time is 5 to 10 minutes for a 27½ x 29½ in. plate. Much finer grain resulted. The entire procedure is given.

Paper and Ink

COATED OFFSET PAPERS AND THE COMPOSITION OF THE FOUNTAIN WATER. J. H. Bitter. *I.G.T.-Nieuws* 11, No. 2: 25-30 (February 1958) (in Dutch). *Abstract Bulletin of the Institute of Paper Chemistry*, Vol. 29, No. 7, March 1959, page 1029. Surface-active agents in coated paper can lead to tinting. Reducing the pH of the fountain water increases the activity of these substances on starch-coated papers, but has little effect on casein coated papers. Investigations showed that the kind of acid used for the acidification of the fountain water makes no difference in these relationships. Hence, acid fountain water should be avoided with starch-coated papers.

MAGNETIC INKS FOR ELECTRONIC SENSING. C. B. Blake and L. F. Miller. *American Pressman*, Vol. 69, No. 4, April 1959, pp. 12, 16, 3 pages. After studying several possible properties, the American Bankers' Association has chosen magnetism for check sorting. In sorting, the image is first magnetized by a strong permanent or electro magnet, then passed over the read head which is activated by the magnetic flux emission of the image and each character is identified by electronic means. This usage establishes the desirable characteristics of magnetic ink pigments. Dilution of the ink can reduce the strength of the signal and should be avoided. Other influencing factors are mentioned. Magnetic inks have been developed jointly by IBM and Sinclair and Valentine, and others. Inks are delivered ready for printing by letterpress or offset. Inks for screen printing, flexography or gravure are being developed. Certain limitations and applications are discussed.

* PERMANENCE IN BOOK PAPERS. W. J. Barrow and Reavis C. Sproull. *Science*, Vol. 129, No. 3356, pp. 1075-84, 10 pages, April 24, 1959. Deterioration of paper in books, especially among books of recent decades, has become a serious problem for libraries. Papers now going into books have low folding endurance and low life expectancy. Acidity appears to be the principal cause of deterioration. A stabilizing process has been developed which appears to inactivate the most injurious properties found in new book papers and should counteract the effect of pollutants absorbed from the air. An accelerated aging test developed by the National Bureau of Standards is mentioned. 15 references.

PRACTICAL TESTS FOR PAPER. William H. Bureau. *Graphic Arts Monthly*, Vol. 31, No. 7, July 1959, pp. 28, 30, 98, 3 pages. The printer can make certain simple tests which can save time and forewarn of possible trouble. Several methods are given for basis weight determinations, with some mention of the effect of humidity. Micrometers and their use in measuring caliper, also pile measurement for bulking thickness are described. Other physical properties easily determined are squareness of sheet, bowed edges, curl, opacity and color.

INKS FOR WEB-OFFSET PRESSES. Ludwig P. Horn. *National Lithographer*, Vol. 66, No. 7, July 1959, pp. 39, 42, 2 pages. The main problem of inks for web-offset presses is rapid drying, aided by heat. These conditions are different enough from normal so that old favorite "dopes" must be forgotten. Generally, only heavy varnish for tack, dry magnesium for scumming, and solvent should be added. The use of these additives is explained in relation to the troubles they are to correct.

PATRA DEVELOPS FLUFF TESTER. Anon. *Modern Lithography*, Vol. 27, No. 8, Aug. 1959, pp. 61, 121, 2 pages. After extensive research and trial in prototype form, the tester is now available from PATRA for £98 ($275). The instrument has shown a high degree of correlation with practical printing conditions. The machine is illustrated and its method of operation described.

Lithography—General

PLATE TROUBLES IN THE PRESSROOM. Matt. Schillen. *National Lithographer*, Vol. 66, No. 4, April 1959, pp. 18, 22, 73, 92, 4 pages. Certain pressroom troubles which are caused by imperfect plate making are discussed on a cause-and-effect basis. More specifically, plates on zinc, both surface and deep-etch, are treated and various remedies given for the different forms of blinding and scumming that can occur. Work right on the plate on the press for the removal of dirt spots and scratches and the addition of solids, etc. are explained in some detail.

* INK PIGMENTS AND VEHICLES. CHAPTER EIGHT. THE HOW AND WHY OF CARTON LITHOGRAPHY. Anon. *Boxboard Containers*, Vol. 77, No. 797, May 1959, pp. 105-7, 3 pages. Certain special properties of inks for lithography, such as the heavier color required, are explained. Inks generally consist of pigment, vehicle, drier and modifier or extender. Pigments are grouped as organic and inorganic and each explained. Most used vehicles are the vegetable drying oils. Drying by absorption and oxidation, and driers and their part in it are explained. Ink formulation and manufacture are discussed briefly.

GEAR STREAKS ON OFFSET PRESSES. Charles W. Latham. *American Pressman*, Vol. 69, No. 6, June 1959, pp. 28-9, 2 pages. Circumstances other than gears can be the cause of what are known as gear streaks. Some of these are: grainless plates, high gloss coated paper, soupy inks, and light tints which show up streaks more readily. "The tendency for a press to streak is brought about by the blanket trying to drive the plate cylinder or the back cylinder, and the gears acting as brakes." Proper blanket packing to overcome this tendency is described.

WHY THE FUTURE OF WEB-OFFSET IS SO BRIGHT. Olin E. Freedman. *Modern Lithography*, Vol. 27, No. 7, July 1959, pp. 41-2, 109, 111, 4 pages. A survey of printing processes in comparison with web-offset shows: Letterpress has limited room for improvement; gravure has made substantial strides but cylinder preparation problems limit it to long runs; screen process has found a field without cutting in on existing processes; flexography has limitations, but is growing in certain specialty fields; dry-offset was oversold, its limitations confine its use to few applications. Web-offset is an increasing portion of the continued growth of offset lithography. New developments are giving higher production, less spoilage, improved quality, lower costs. Paper improvements have helped. Author estimates over 1,000 web-offset presses in U.S. today, approximately 300 on publication and similar work, rest on forms and a few specialties. New installations are 150 to 200 per year.

WHAT CAUSES VARIATIONS IN PRINTING? Frank Arbolino. *Modern Lithography*, Vol. 27, No. 7, July 1959, pp. 57, 107, 2 pages. Variations in density over the length of the printed sheet are examined in relation to possible causes, mostly in the setting of the ink fountain and rollers. Remedies are given.

CONTROLS GUARANTEE TOP QUALITY. Anon. *National Lithographer*, Vol. 66, No. 7, July 1959, pp. 14-6, 90, 4 pages. A report on methods used at Litho-Krome Co., Columbus, Ga. to eliminate guesswork and uncontrollable factors and substitute scientific standards. Main factors in control are color code control charts and densitometers. The use of these controls throughout the process is described and illustrated.

WHAT TO DO WHEN PLATES GO BLIND. Matt. Schillen. *National Lithographer*, Vol.

Delivery end of Hantscho Web Offset Press. Early editions, being examined at Poole Bros. plant. From left to right, Chas. Wene, V.P. Reliable Paper Co., Howard Fiedler, V.P., Poole Bros., Wm. Wade, Exec. V.P. and Emil G. Stanley, Pres. Stanley Publishing Co., M. H. Motschman, Pres. Reliable Paper Co., John F. King, International Paper Co.

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Emil G. Stanley, president and publisher of the Stanley Publishing Company says: ***"This conversion from letterpress to offset is something we have talked about for a long time. Now, it is an actuality".***

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66, No. 7, July 1959, pp. 21, 86, 88, 3 pages. A practical pressman discusses the causes back of the blinding of fine grained or grainless plates such as copperized deep etch, and gives remedies for each specific case.

How To Plan Your New Offset Plant. Charles W. Latham. *Inland and American Printer and Lithographer*, Vol. 143, No. 4, July 1959, pp. 48-9, 89, 3 pages. Sooner or later every progressive shop gets pinched for space and should plan for expansion. A good plan requires a year or more to develop. Here are some major points to be considered: determine location and size, call in electrical and plumbing specialists, plan wings to provide expansion room, lay out aisles carefully for work flow and storage, plan on what operations will be kept in the plant and what let out.

Pressman Must Follow Carefull Daily Routine on Job. George M. Halpern. *Inland and American Printer and Lithographer*, Vol. 143, No. 4, July 1959, pp. 66-7, 2 pages. Here are a number of suggestions to make life easier for the pressman. He needs to know the proper clothing and shoes to wear for safety measures. First task is to check his press to make sure it is in operating order. Dampeners may be affected by humidity conditions in the pressroom. Some tips are given on adjustments to eliminate defects.

Feeders (in Fountain Dope). John D. Payne. *New England Printer and Lithographer*, Vol. 22, No. 6, July 1959, pp. 17-8, 2 pages. After the automatic feeder's job is finished, mechanisms more related to the press take over. This article explains what happens after the feeder has separated the sheet and sent it down the feedboard, and until it is in the cylinder grippers. The relationship of the push-up wheels to the stops, the adjustment of push or pull movement to the side guides, detection devices, tumbler grippers, swing-grippers or feed roll insertion devices are all explained.

Proving and Checking the Litho Positives. (Chapter 11 of the How and Why of Carton Lithography.) John Jackimiec. *Boxboard Containers*, Vol. 77, No. 800, Aug. 1959, pp. 47-50, 4 pages. Proofing saves money as corrections can be made before errors show up in a press run, also proofs can be used to check dies. Photomechanical proofs can be in color via diazos or pigmented light sensitive materials. Ink proofs can be made on a hand proof press, power proof press or a single or two-color production press. Tips are given on checking proofs, allowing for differences between proof and production results.

Five Steps to Watch in Packing the Press. Anon. *Modern Lithography*, Vol. 27, No. 8, Aug. 1959, p. 52, 1 page. From a bulletin of the Lithographic Division, New York Employing Printers Association. Some precautions are given, then the five steps as follows: 1. Mike the blanket. 2. Mike the plate and all packing sheets. 3. Use hard, non-bulky, special packing sheets. 4. Record all readings, add carefully to get desired packings. 5. After packing, run press several minutes with pressure on, then check both cylinders with packing gauge.

'Our First Year With Web-Offset.' Murray J. Monse. *Modern Lithography*, Vol. 27, No. 8, Aug. 1959, pp. 40-2, 3 pages. Growth of the circulation of a magazine led to the purchase of a four-unit perfector web-offset press. A consulting engineer supervised the installation of the press, which required floor reinforcement. A training program acquainted the organization with the combinations of layout possible with the new press and its folder. Experiments with plates led to the use of a bimetallic plate for 400,000 runs on groundwood papers; inks and papers were, and still are, problems as well. Production planning to give a minimum of press changeovers was found to be important. After the first year, they are satisfied, optimistic for the future.

The Next Ten Years in Lithography. Michael H. Bruno. *Graphic Arts Monthly*, Vol. 31, No. 8, Aug. 1959, pp. 100, 102, 104, 106, 109, 110, 114, 116, 118, 120, 10 pages. Predictions are based on what is in research now and will be in general use in six to 10 years. Some advances of the past few years are cited and the need for time and persistence shown. Big changes are expected in dampening, and the Mullen, parchment covered roller, and Dahlgren systems are described, and some of their background given. Emulsion inks which will not require a dampening system may now be possible. Ink distribution systems are due for redesign as inks and dampening systems change. Blankets are discussed, needed improvements noted,, and the possibility of their elimination by return to direct lithography considered. Faster drying inks and truer process colors should come. Paper changes should bring less susceptibility to change in humidity and more brilliant whites. Plates will be presensitized or precoated, longer running, and on purer metals. Continuous tone may come. Electrostatic platemaking methods can become important. Other phases of lithography expected to grow are: electronic color separation, phototypesetting, camera color composing, web printing, automation in various forms, control of print quality. Research is the key to the future.

How To Lay Out Offset Plateroom. Charles W. Latham. *Inland and American Printer and Lithographer*, Vol. 143, No. 5, Aug. 1959, pp. 89-90, 93, 3 pages. Suggestions are offered for the redesign of an existing department or for planning a completely new start. Workflow is given full consideration and a suggested layout used to illustrate its significance.

Graphic Arts—General

Encoded Check Testing Program. Anonymous. *Printing Magazine* and *'The Offset Printer.'* Vol. 83, No. 7, July 1959, p. 45, 1 page. A free service for testing checks imprinted with the new E-13-B characters in magnetic inks is offered by National Cash Register Co. Batches of 1,200 checks are run through a four-stage procedure: 1. Visual test. 2. Optical comparator test at 50X magnification. 3. Signal level readability test. 4. Paper handling test.

'Do-It-Yourself' Department Pays for Small Plant. Glenn S. Hensley. *Printing Magazine*, Vol. 83, No. 8, Aug. 1959, pp. 102-3, 2 pages. A description of how American Press at Columbia, Mo., by combining several maintenance and servicing departments into one group were able to make this 'do-it-yourself' department pay off.

Changing Technology Keyed to the Camera. J. W. Rockefeller. *Printing Magazine*, Vol. 83, No. 8, Aug. 1959, pp. 58-9, 2 pages. Part One of a series. These articles take a look at the future of the graphic arts from an engineering standpoint. The future of printing is said to be tied to processes starting in the camera. Other points discussed briefly include plastic type, lightweight furniture, the Scan-A-Graver and the limited future of the flatbed letterpress. Large, forward looking companies like RCA and DuPont are showing interest in the graphic arts and can be expected to have an influence on the future of that industry.

Unique Printer Spews Out Data. Anon. *Control Engineering*, Vol. 6, No. 8, Aug. 1959, pp. 35-6, 2 pages. A brief description with illustration of a data printing process using a cathode ray tube with a matrix of wires which convert the projected image into an electrostatic image which can be converted into a visual image and fixed by electrostatic techniques similar to xerography. It is called the Videograph process, was developed by the A. B. Dick Co. with the tube developed by Stanford Research Institute. One application mentioned is the printing of magazine address labels.

A Look Into The '60s. Don H. Taylor. *Graphic Arts Monthly*, Vol. 31, No. 8, Aug. 1959, pp. 56, 58, 62-3, 66, 68, 70, 72, 8 pages. Excerpts from a talk given before the annual meeting of the Master Printers Association of Newark and vicinity, May 18. Auther first reviews the past decade and continued business growth is predicted. Along technological lines, the doubling of research expenditures is expected, and more technological advancement in the next 15 years than the past 500.

How and Why to Buy Equipment. George W. Harper. *Inland and American Printer and Lithographer*, Vol. 143, No. 5, Aug. 1959, pp. 68-71, 126, 129, 6 pages. Equipment purchase should be a "team" operation. The operation is analyzed into the following steps: 1. The need for a product is realized. 2. Survey what is available. 3. Select suitable equipment. 4. Estimate costs. 5. Forecast output and all operating costs. 6. Prepare report for management approval. 7. Get approval, place order. 8. Install, train staff and operators, get in full operation. Each of these steps is explained in some detail. Tables assist on life of equipment and depreciation.★

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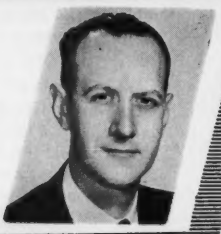

By *Herbert P. Paschel*
Graphic Arts Consultant

Using Colored Lights; Low Density Greens

Colored Lights

Q: A fellow cameraman insists that making separation negatives with colored lights is better than using white light and filters. What is your opinion?

G. S., ERIE, PA.

A: Competent authorities are pretty much in agreement that the standard tri-color filters produce as good a separation of the red, green and blue elements of color copy as can be expected. Their opinions are based on the fact that the tri-color filters commercially available have the desirable characteristics established by extensive theoretical and experimental investigations. It follows, therefore, that colored lights satisfying the essential requirements should give at least equally good results. The research on which the above is based also revealed that filters with greater and lesser overlap did not offer any overall improvement — in fact would degrade and distort color rendition in specific areas. This, obviously, would likewise apply to colored lights.

In one respect your friend might be right, but this would not have any bearing on color separation as such. It has been observed that the tone reproduction characteristics of emulsions vary with different light sources. For example, exposure with electronic flash often results in reproduction curves with a longer straight-line portion and lower gamma than the same emulsion exposed to arc light.

It is impossible for Mr. Paschel to give personal replies by mail, but all questions will be answered in this column as soon after receipt as possible. The columnist also is available to the trade as a consultant for more complex litho problems.

In the case of fluorescent grids (cold cathode) some results indicate improved shadow detail as compared to arcs.

All of this is a question of tone rendering, rather than color separation. However, the two are inseparable for good color reproduction. Whether the latter phenomena are due to varying responses of the photographic emulsions because of the "reciprocity factor," or to some quality of the light sources is, as yet, not definitely established.

If the colored lights your friend has in mind, or uses, have the desirable spectral qualities, plus the ability to produce better tone rendering, then, of course, he is right. But not because of any superior division of the spectrum.

Low Density Greens

Q: In separation negatives I notice that medium and light green areas always appear to have less density than they should have. Wouldn't I get better results with a green filter having more transmission than the "B" filter I am now using?

C. W. N., BUFFALO

A: You better understand your problem thoroughly before you make any changes in your technique. In fact, don't make any changes.

It is not generally realized that most green colorants have a very low reflectance in the green region. Perhaps we don't appreciate this fact because the peak sensitivity of the human eye is in the green region, which gives an observer a feeling of brightness not directly related to the actual radiant energy present. In making a set of separations we record the red, green and blue values of the copy directly in accordance with the radiant energy reflected. The camera evaluates and records the radiant energy in a physical sense. Vision is only a sensation and often very misleading.

If you try to improve the greens in the way you suggest you'll do so only at the expense of other colors. Color correction, masking, etc., are necessary because of other deficiencies, mostly the inks—not because of filter characteristics.

What Causes Streaks?

Q: The enclosed negatives are sections of Autoscreen film I exposed and developed. I have been getting the same streaky results shown in the samples with different batches of film

and developer. On the same camera I can make good contact screen halftones with regular film and the same developer. Can you give me any explanation for this trouble?

C. O. B., ORLANDO, FLA.

A: While the samples show the defect plainly enough, they offer no clue as to what caused the streaks. Since the trouble doesn't occur when you make halftones in the conventional way, it hardly seems likely that faulty agitation during processing is the cause. Streaky results such as yours, especially in the highlight region, can often be attributed to excessive exposure and short development. Stray light from leaks in the camera or lens flare can be contributing factors.

Make a few tests at lower exposure levels than your present practice but with the standard developing time. Also make a developing test by exposing one piece of film normally, cutting it into five strips and developing each piece differently. Insert all pieces in the tray at the same time. Remove the first strip one minute sooner than the normal developing time and then remove each remaining strip at half minute intervals. If all the negatives of both exposure and developing tests show streaks, the trouble is either defective film, faulty developer, improper agitation in the developer, or insufficient agitation when transferring the negatives into the fixer.

If the streaks are not evident on the negatives made with less exposure, continue experimenting until you arrive at an exposure and developing technique that gives satisfactory negatives free of blemishes.

Should none of the foregoing eliminate the trouble or give you a clue, then check all possible sources of unwanted light. Test the lens for flare—both inherent and from dirty surfaces. Also check the safety factor of your darkroom illumination. And don't overlook light leaks in the camera, hotspots on the copyboard and extraneous light shining directly into the lens.

In order to avoid finding yourself in a helpless position in the future you might find it worthwhile to use a gray scale as a means of control and reference. The scale is placed alongside line and halftone copy and photographed along with it. The scale is used as a checkpoint to determine when the desired density has been reached in development. The actual control values are established by trial and error. This is simple enough to do. You merely make a good negative and then use the scale as a reference point. In all other good negatives the scale should appear the same as in the original test negative.

A gray scale is nothing more than a series of densities from white to black, each of which is numbered. With line negatives, for example, only (with maximum contrast between black and white) the same step originally selected as the control point should develop up black in the normal developing time. If it doesn't, this

(*Continued on Page* 121)

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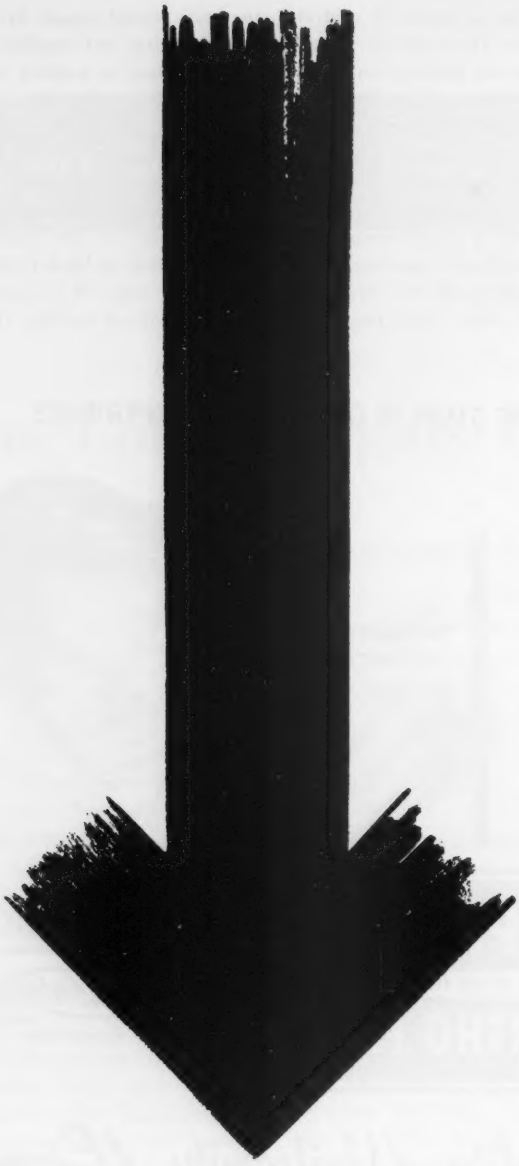

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Recent developments in

Coil-Fed Coating Processes

Part 2

By *Anthony W. Pomper*
Director of Engineering, Waldron-Hartig Div.
Midland-Ross Corp., New Brunswick, N. J.

VERTICAL ovens can also be used to save space in the coating operation but coating is limited by coating sag. One of the best possibilities for high speed operation with minimum oven space is the high velocity air dryer. It is in commercial operation on many paper coating installations, and has been experimentally proved for metal strip operations. Further cooperation between the coating manufacturers and oven engineers should produce coatings which can be baked by high velocity air in a small fraction of the customary baking period.

It seems reasonable to say that the most important single machine in a strip coating line is the coater. Since all the other equipment is installed essentially to prepare the strip for coating, dry or bake the coating, and rewind the strip, special emphasis should be placed on the quality of the coater. It must apply an accurate, uniform film, free of streaks or chatter-marks. For maximum versatility it should be adaptable for many requirements.

The basic coater of a type frequently used is the triple head, two-roll type shown in *Fig. 11*. Two heads for the top side coating are included for instantaneous color change without slowing or stopping the line. Generally, one head is included for the back side. Each head consists of two rolls, a steel metering roll and a rubber applicator roll. The drives are reversible so that coating can be applied by the direct (applicator roll traveling with the strip) or reverse methods.

The reverse roll application reduces coating pattern, which is formed to a varying degree whenever two rolls rotate with their adjoining surfaces traveling in the same direction. On the other hand, the rubber rolls will require less frequent regrinding or recovering with direct application of coating because there is essentially no relative motion to produce wear between the strip and the rubber roll with this method. It is desirable for the coater drives to be arranged for direct or reverse application.

The most recent coater designs permit mounting either two or three roll heads on the same coater frame. Rolls are interchangeable and the hydraulically or pneumatically operated cylinder throw out mechanism can be connected to either head. The coater shown in *Fig. 5* can be supplied with two roll heads for later conversion to three roll heads as shown. The three roll heads (*Fig. 12*) can

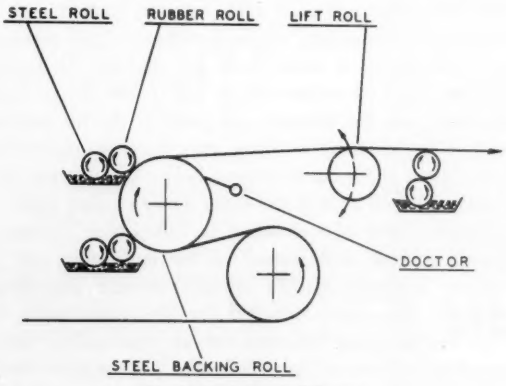

Fig. 11. Basic Two-Roll Coater.

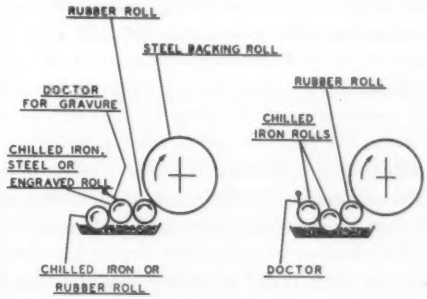

Fig. 12. Three-Roll Coating Head.

be arranged with the third roll or the middle roll in the coating pan. The full reverse roll coating with the middle roll in the pan has all rolls driven so that their adjoining faces move in opposite directions.

Metering is accomplished by the gap between the precision ground chilled iron rolls, with the rubber roll transferring coating to the strip. As all surfaces travel in opposite directions, there is no splitting of the coating film, and consequently no film split pattern. The need for good flow-out characteristics is eliminated; viscous coatings such as plastisols can be applied without pattern. This method will apply the smoothest and most accurate coating in its range of wet film thicknesses down to two mils.

With the third roll rotating in the pan, many coating methods can be used. This arrangement is suitable for direct precision roll metering with reverse transfer and application (similar to full-reverse roll except that a thinner coating can be applied, but slightly short of the ultimate in pattern-free appearance); pressure metering (between rubber pickup roll and steel metering roll) with direct or reverse transfer; spot coating, with the transfer roll surface cut away except where the coating is to be applied to the strip; and, standard gravure offset coating (metering with an engraved roll and oscillating doctor, transferring with a rubber roll). A special variation is "EMRA" or engraved metering, reverse application. This is similar to gravure offset except for reverse application to the strip. With standard gravure offset, only one coating weight can be applied with a single engraved roll. The EMRA method allows considerable control of coating weight by varying the speed of the coating head relative to the strip. This method is comparable to full-reverse roll coating, but may be used for lower coating weights.

Another coating method is the application of the same color to both sides of the strip by directly opposed coating heads with the applicator rolls squeezing the strip between them. Other coating techniques are in development, but have not yet progressed to the point where information can be released.

Printing instead of coating is possible by special provisions on the coaters described. The print roll drive with any printing method must be closely synchronized with the strip speed. Single color gravure-offset printing can be accomplished on either the two-roll or three-roll head with the addition of an oscillating doctor, suitable gearing between the rolls, and a gravure print roll. One or two-color flexographic printing is possible on the standard three-roll head by substituting a rubber plate cylinder for the applicator roll. At greater expense, one of the coater heads can be converted to offset printing.

An interesting possibility for four-color printing on strip is shown in *Fig. 13*. This unit has not been applied to strip, but is performing very well in four-color printing by dry-offset on 50-gallon steel drums. The four plate cylinders are each inked by a conventional litho inking head. All plate cylinders operate against a common blanket cylinder, which in turn prints on the material supported by the impression cylinder. The advantage of

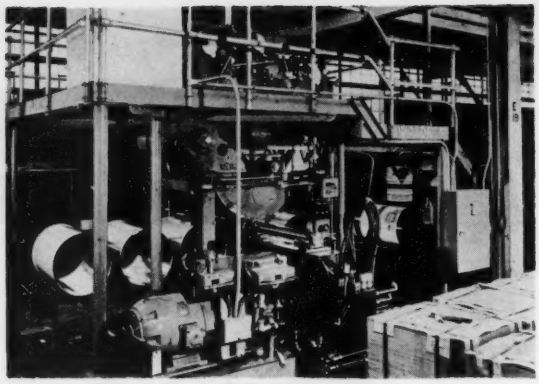

Fig. 13. Four-Color Printer.

this printer is that color registration is no problem, as all colors are registered on a single blanket cylinder. The open ended steel drums processed by this machine can be considered similar to steel strip. However, the mechanical design of the printer would be somewhat different for strip application.

Lamination of material to the strip is another possibility on a coating line. The strip is coated with an adhesive, dried, and then brought into contact with plastic film or other laminate. *Fig. 14* illustrates a com-

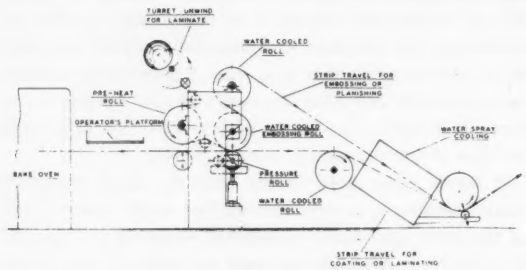

Fig. 14. Laminator-Embosser.

bination laminator-embosser. For laminating, the plastic film is fed from an unroll around a pre-heat drum and into contact with the strip in the laminating nip. The strip-film laminate is then cooled by water spray.

For embossing, the strip is first coated with a vinyl plastisol which is fused in the oven. Coming out of the oven, the strip is forced into intimate contact with a water cooled embossing roll by a rubber covered pressure roll rotating in a water bath for cooling. Hydraulic pressure loads the rubber roll at 100 to 500 lb. per inch, depending on the coating and pattern. As the pattern must set before removal of the strip from the embossing roll, at least 90° wrap is allowed before transferring to a cooling roll and then to the water spray cooling unit.

Another form of embossing is "planishing", using a smooth polished roll instead of the embossing roll to produce a glossy smooth surface. Several planishing machines have been installed for the manufacture of vinyl surface floor covering, in an application which should be of interest for metal strip processing as well. The strip, which in this case is a thick, impregnated,

paper-like material more than 150 inches wide, is printed by multi-color gravure offset, then coated with a clear vinyl plastisol several mils thick. The plastisol is fused in an oven and passed through the planisher, which develops a polished, glossy surface. The printing is under several mils of transparent vinyl coating. Instead of planishing, embossing could be used on metal strip in a similar system.

Summary

Rugged and reliable equipment is available for wide or narrow strip, at high or low speeds. Standard or specially engineered equipment can be supplied to meet the specific needs of the user. For higher speeds or limited space, vertical or stacked horizontal treating sections and stacked horizontal dryers of various arrangements are in use. High velocity air drying holds great promise.

The strip coater is the heart of the coating line. Precision operation and uniform drive are important. Desirable features are interchangeability of two-roll and three-roll heads for various methods of coating with many materials. The coaters can be converted to printers such as single color gravure or two-color flexographic. Other printing equipment is available.

Embossing and laminating are possible on strip. An interesting idea is the tandem operations of prime coating, printing, clear plastisol coating, and embossing for a printed surface which cannot be worn off or easily damaged.

Other ideas, methods and machines are in development now, and may be released soon. With the present and anticipated future expansion of strip coating operations, new developments may be expected to meet the new product requirements. ★

By *Allen S. Dawe*
J. O. Ross Engineering Div.,
Midland-Ross Corp., New York

THE mechanical phases of handling coil stock present to the plant a completely different approach to handling metal stock, so that a reorientation of manufacturing processes and flow lines is a necessity. In considering the other components of a strip coating line, namely the baking ovens, the paint usage, and the metal preparation machine, the flow line comparison between your present sheet method and the strip coil method will become more obvious.

Supplier Groups

There are supplier groups involved in these phases of the strip coating line: paint companies, chemical companies, and raw coil processors. These suppliers dictate the equipment decisions based upon the end use. It would be well, I believe, to bring out certain comparisons between sheet lithography and strip coil coating:

Sheet vs. Strip Coil

1. Speed—Present speeds of sheet handling are above 100 sheets a minute.

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2. Present coatings are applied on one side only, whereas in strip coating, both sides can be or are coated simultaneously.

3. The method of applying solid color coats on both sides and/or in printing all-over patterns, has been perfected in coil processing.

4. Spot-coating on the top side, with multi-color coating into pre-designated and registered patterns on coil, has *not* been perfected as yet.

5. Pre-cleaned sheet stock is a standard in metal decorating, whereas in the coil process, all coils received must be cleaned and prepared for painting while the strip is in motion.

6. Baking times on sheet lithography are from 10 to 16 minutes at 420°, while coil coatings can be baked in one minute or less in temperatures up to 600° or 650° F.

7. The end use of sheet coated stock is in most cases entirely different from the end use of coil coated stock.

Metal Preparation

Since most decorators have not found it necessary to deal with the problem of cleaning metal, prior to coating, this phase of coil processing, warrants some discussion:

Metal preparation of aluminum steel or galvanized steel requires a different treatment. A metal preparation machine has a cleaning stage, hot or cold rinse stage, metal etching or phosphatizing stage, cold rinse stage, and an acidulated rinse stage. Normally, a blow-off is installed at the exit end.

Cycles for the stages are as follows:

1. — Clean	20 to 30 sec.	— 160°F.
2. — Rinse	5 to 10 sec.	— 130°F.
3. — Phosphate	15 to 20 sec.	— 110°F.
4. — Rinse	5 to 10 sec.	— —
5. — Acid	5 to 10 sec.	— 140°F.

The third stage, which is the important stage, applies phosphate coating which come under the general heading of zinc phosphates, iron phosphates or amorphous chromates. They prepare the metal for improved paint adhesion as well as inhibiting the surface against the spread of rust.

A metal preparation machine of the above design, operating at 100 fpm, would be approximately 90 to 135 ft. long and would consist of a rectangular tunnel spray housing through which the strip passes for spraying the solution to the top and the bottom. The solutions run back on drain boards into tanks which protrude from the center of the stages and upon which are mounted the circulating pumps. Heating equipment can be either steam or gas and the entire process is automatically controlled.

Between each stage of the machine there are sets of squeeze rolls which squeegee the water back into the preceeding stage, thereby preventing carry-over into the next stage. The entire top of such a machine is a series of removable panels. Both ends have exhaust duct connection for control of the possible emission of steam through the slots.

Usually the first two stages and the last two stages are constructed of black iron, while the application zones should be of stainless steel. Such a machine is a series of removable panels; both ends having exhaust duct connection for control of the possible emission of steam through the slots.

Usually the first two stages and the last two stages are constructed of black iron while the application zone should be of stainless steel. Such a machine is fabricated in pre-piped and pre-assembled sections of 25 to 40 feet and shipped as a unit.

Paints and Paint Companies

Since strip coating is so new we do not have a complete story on all the paint company activities. However, we do know that many of the larger paint companies have interested themselves in manufacturing and selling strip coating paints, which come under the following classifications:

a. Alkyd Nitrogens
b. Vinyl Alkyds
c. Vinyls
d. Modified Vinyls
e. Amine Alkyds
f. Modified Acrylic
g. Organosols
h. Methacrylatee Clear
i. Plastisols

Top coatings can be satisfactorily applied by roller coating on continuous strip coil from 3/10 of a mil to 20 mils and simultaneously applied with the underside coating up to one mil. By an ingenious arrangement of coaters, rolls and ovens, heavier and additional coatings can be put on either side while passing over backing up-rolls as a second baked coating.

The solvent solid relationship of paints used in roller coating, varies all over the lot, from the thinnest of the Methacrylate Clears, which are only 10 percent solids, to the Organosols, which are almost 100 percent solids. However, the average decorative paint can be considered approximately 30 to 40 percent solid by volume for purposes of solvent control and evaporation. In this range, a one mil coating will spread over from 500 to 600 sq. ft. of surface.

It should be mentioned that the cost of paints for coil roller coating is not much in excess of similar paints applied by the spray or dip method. Perhaps a 15 percent increase would be accurate.

Groupings of low and high boiling point solvents are usually employed in the formulation of paints for roller coating, so that the release through the film is at a more or less uniform rate. The average baking cycle is one minute. The release of such a large volume of solvents without wrinkling the surface or without case hardening is a masterpiece of successful formulation.

Since the high solvent content is a factor, it would be well to make a test calculation to illustrate the volume of release required in one of our oven units.★

Conclusion of Mr. Dawe's discussion, covering construction of the oven and the water-quench unit, will be published in February.

ALBERT GOMMI

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LITHO CLUB NEWS

Chicago

Officers Installed

The Chicago Litho Club got a head start on 1960 by installing 1960 officers at the Christmas party Dec. 17 at Toffenetti's.

Emil Winter, of Sleepeck Offset Corp., is the new president. Other officers are James K. Martin, Chicago Lithographic Institute, 1st vice president; Richard F. Boever, Coburn & Co., 2nd vice president; John L. Jachimiec, Container Corp. of America, secretary; and Wm. L. Byers, North American Litho, treasurer. Retiring president, W. Stuart Grau, The Miehle Co.. was appointed a board member.

Mr. Winter has named the following as chairmen of the committees which will administer club activities during 1960:

Education, John Dudley; Roster, Lester Miller; Entertainment, Walter Gorecki; Attendance, Ernest W. Karge. Jr.; Technical, Richard Rehusch; Membership, Elmer Given; "Hi-Lites" and publicity, Wayne Schmuhl; Sickness and visitation, Wm. E. Murphy; and Sergeant-at-Arms, Elmer C. Bulinski.

Starting the 1960 educational program late this month M. A. Connelly of the Du Pont Co., will present a non-technical discussion of three-color theory.

President's Message

By Fred A. Fowler

President, National Association of Litho Clubs

WE appreciate this opportunity to tell Litho Club members of NALC happenings. We have had a rapid and healthy growth from six clubs with less than 1,000 members to the present 32 clubs with over 4,500 members. The secret of our success is simply the fact that we teac hand practice sharing our knowledge. Our motto is "Information, Fellowship and Cooperation." Attend any Litho Club meeting and you will see this in action. Ask any member if he thinks his membership in the Litho Club has helped him. You will most certainly receive an enthusiastic "yes."

The NALC was established to help form other local Litho Clubs and to promote the sharing of knowledge. Naturally, having a parent organization takes money. The larger it grows the more time and money is needed to operate efficiently. We have been operating on a deficit budget for the last two years and this is not healthy. In addition, our large membership has increased the duties of the NALC officers. It has gotten to the point where it is physically impossible to perform the duties of office efficiently. Remember, NALC officers

(*Continued on Page* 77)

Young Lithographers

Will Discuss Magnetic Inks

The Young Lithographers Association of New York, at their next meeting on Jan. 13, will feature a panel discussion on "Magnetic Sensing and Data Processing." The panel will discuss the advances made in the use of magnetic inks for both lithography and letterpress.

The panel, at the Advertising Club, will be composed of Fred J. Kraemer, Jr., president of Dennison & Sons; H. E. Fowler, senior buyer in charge of printing, office machines and duplicating media for Pan-American World Airways and John J. Wegener, industrial engineer and assistant to the president of Dennison & Sons.

The three will discuss in detail some of the problems they have encountered in using magnetic sensing for processing bank checks and airline tickets.

Connecticut Valley

Graham Discusses Advertising

"The Advertising Agency and Its Relation to the Printing Industry" was discussed at the December meeting of the Connecticut Valley Litho Club, by Hugh H. Graham, president of Hugh H. Graham Associates.

In his talk, Mr. Graham presented statistics pointing up the rapid population expansion and the challenge this growth presents to the graphic arts. He then described the operations of his advertising agency, presenting its methods and problems and pointing up the important part played by lithography in its operations.

Also present at the meeting to answer technical questions was Edward Snelgrove, production manager of Graham Associates. He presented a display of lithographed pieces which have been used recently in advertising programs.

The next meeting of the club will be Feb. 5, at the Bond Hotel, Hartford. Main business of the meeting will be the election and installation of officers.

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Washington

Discuss Use of Types

Frank Mortimer, director of typography and design at the Government

Frank Mortimer

Printing Office and professor of graphic arts at American University, spoke on the use and application of types in the graphic arts industry at the November meeting of the Washington Litho Club. Professor Mortimer also presented a series of slides about his subject.

Fred A. Fowler, president of the NALC, swore in the following new members: Patrick E. Clark, Haloid-Xerox Co.; Wilbur Edwards; and Bruce Haigh, Universal Printers; David Harmon, Plymouth Printers; Kenneth King, Judd & Detweiler; Albert Malachuck, Royal Zenith Co., and Frank Stewart, Universal Printers.

Shreveport

Elect New Officers

The Shreveport Litho Club recently elected officers for 1960. Kenneth Dees was named president; Paul Chandler, vice president; Elizabeth Arnold, secretary; and Sarah Quigles, treasurer.

Baltimore

Quality Control Discussed

Robert A. Luciani, quality control supervisor for Haynes Lithograph Corporation, presented a program of practical quality control from the camera to the bindery, at the November meeting of the Baltimore Litho Club.

He discussed procedures used by art directors to establish control over the work of suppliers of preliminary work such as artwork and separations.

New members of the club are Daniel Brown and William B. West.

Detroit

Officers Sworn In

Fred Fowler, president of NALC, was present to swear in the 1960 slate of officers of the Detroit Litho Club. They are James Blake, president; Allen Teasdale, vice president; Louis La Frate, secretary; and Frank Ohnesborg, treasurer.

New members are John Heaton, Thomas Murphy, Harold Korrnath and John Bladdick.

Washington

Christmas Party Draws 650

More than 650 persons attended the 15th annual Christmas party of the Washington Litho Club in the ballroom of the Sheraton-Park Hotel, Dec. 19. A roast beef dinner, a fine orchestra for dancing and more than 100 door prizes contributed to the successful party.

Fred A. Fowler, past president of the club and president of the National Association of Litho Clubs, was awarded a silver Senefelder lapel pin for outstanding contributions to the club during 1959.

Albert L. Tucker, retiring president of the club, was presented an inscribed silver cigarette lighter for his excellent leadership of the club during his term of office. Raymond E. Geegh, newly elected president for 1960, made the presentations.

John J. Laverine was party chairman. He was assisted by Charles McFadden, Paul Schafer, Frank Frazzano, James Austraw, Arthur Nugent, Mark Rorick and Mr. Fowler. A big group of suppliers contributed the door prizes.

Club members with whom ML talked at the party declared it one of the finest in the club's history.

Expanded Coverage

The President's Message in the Litho Club section this month is part of an expanded program by ML in coverage of local Litho Club programs and National Association of Litho Clubs functions.

Is news of your club's activities appearing in these pages regularly? If not, why not appoint a correspondent at your next meeting to send us news releases about programs, elections, parties, etc. Material should be typewritten, double-spaced on one side of a sheet of paper. Try to summarize the speaker's comments, and report program for forthcoming meetings, new members and any other pertinent information.

The staff of MODERN LITHOGRAPHY *will be glad to publish as much as there is room for!*

Philadelphia

Plan For Printing Week

The Philadelphia Litho Club did not meet in December due to the Christmas holidays, however, plans have been set for the club's participation in the Philadelphia Printing Week activities this month.

In February the annual quiz night will be the feature. The annual Ladies Night party will also be held in February.

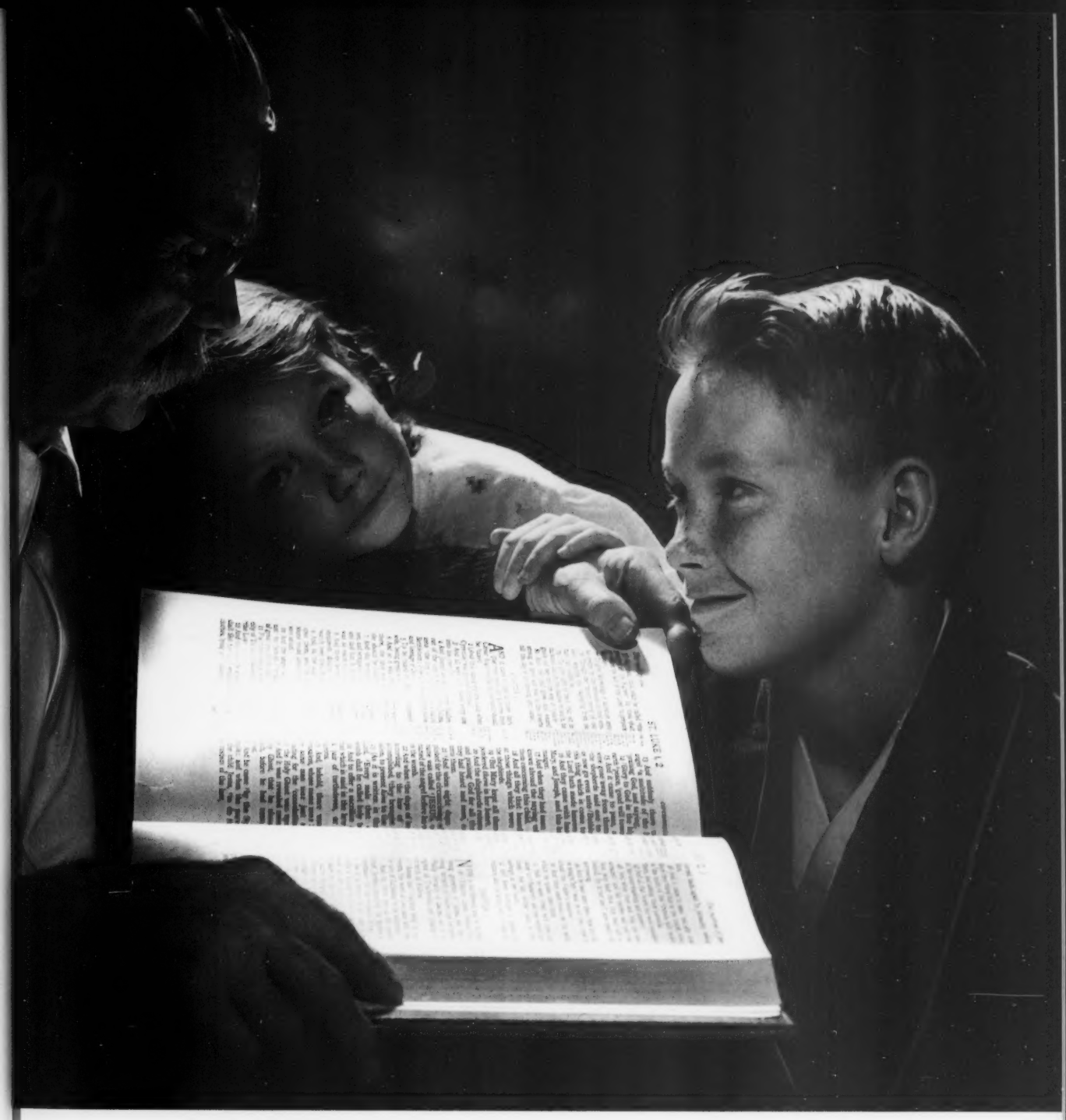
The club was shocked, last month, to learn of the tragic death in an Allegheny Airlines crash near Williamsport, Pa., Dec. 1, of Joseph Mazzaferri, of Colorcraft Litho Plate Co. Mr. Mazzaferri had been a member of the club for many years and was a frequent panelist on the annual quiz night program.

Milwaukee

Christmas Party Featured

The annual Christmas party at the Ambassador Hotel was the order of business at the Dec. 15 meeting of the Milwaukee Litho Club. The party included dinner and dancing.

The members have nominated the following for officers in 1960: Milburn Mundy, president; Leonard Sommerfield, vice president; James



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NOTE

TO QUALITY-MINDED PRINTERS, ADVERTISERS AND AGENCIES

The trend in offset lithography is to the use of premium-quality paper for direct-mail material of all types.

Pace-setter in this trend is the sheet on which this insert is printed. Because its super-whiteness is matched by its super-opacity, in most printed productions one weight lighter of Beckett Brilliant Opaque than run-of-mill offset paper is indicated.

Many leading printers now stock Beckett Brilliant Opaque. Many agencies and national advertisers have adopted it as a standard specification for all their direct-mail productions.

The superior printing surface of this grade preserves the most subtle details of color and black and white illustrations. The popular fancy finishes add texture to the finished production, actually enhance the beauty of the original artwork. There is no slick coating to cause glare or reflection.

Beckett Brilliant Opaque is surface-sized. In addition to Vellum, it is supplied in Halftone and a variety of embossed finishes; in 5 book paper weights—50, 60, 70, 80 and 100 lb. and in 4 cover weights—50, 65, 80 lb. and Double Thick. A request to your paper merchant or to us will bring samples to your desk.

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Color illustration courtesy Diamond Alkali Company

This is BECKETT BRILLIANT OPAQUE, Coral finish, 80 lb.

Burns, sergeant-at-arms; Rudolph Bartz, treasurer and John Miller, secretary.

Herbert Felgenhauer has been accepted as a new member of the club.

Twin City

Kuehn Describes New Process

Albert Kuehn, Miehle Co. division of Miehle-Goss-Dexter, Chicago, offered ideas on how to use new presses and methods to solve production problems and decrease costs at the December meeting of the Twin City Litho Club. In particular, he pointed out how new multi-color presses and makeready methods help increase production.

The January 7 meeting was to feature a discussion of paper.

The Twin City Club and the St. Paul and Minneapolis Craftsmen Clubs, are sponsoring a raffle to finance their share of the 1960 Printing Week budget. First prize in the raffle is a television set.

New York

Christmas Party Featured

The New York Litho Club held no regular business meeting in December, because of the holiday season. The annual Christmas Party on Dec. 12 was well attended.

As in the past the party featured, aside from an excellent dinner and refreshments, entertainment and dancing.

The next business meeting of the club will be held Jan. 27 at the Hotel Shelburne.

●

NALC Holds Meetings

The mid-season Council of Administration meetings of the NALC will take place Jan. 22 and 23, in Hartford, Oshkosh and Tulsa.

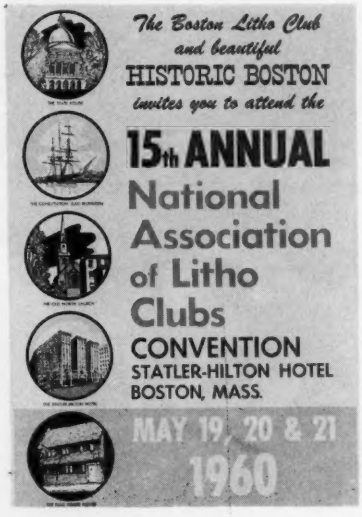
As usual, the meetings will feature, on the second day, a tri-city telephone hook-up.

In previous years the meeting has been only one day. This year, however, it was decided to allot an extra half day in which to prepare for the telephone conference.

Obtaining a permanent secretary and a permanent headquarters are two of the topics scheduled to be discussed.

Poster Plugs NALC

Poster produced by the Boston Litho Club to publicize the 1960 NALC Convention to be held there.



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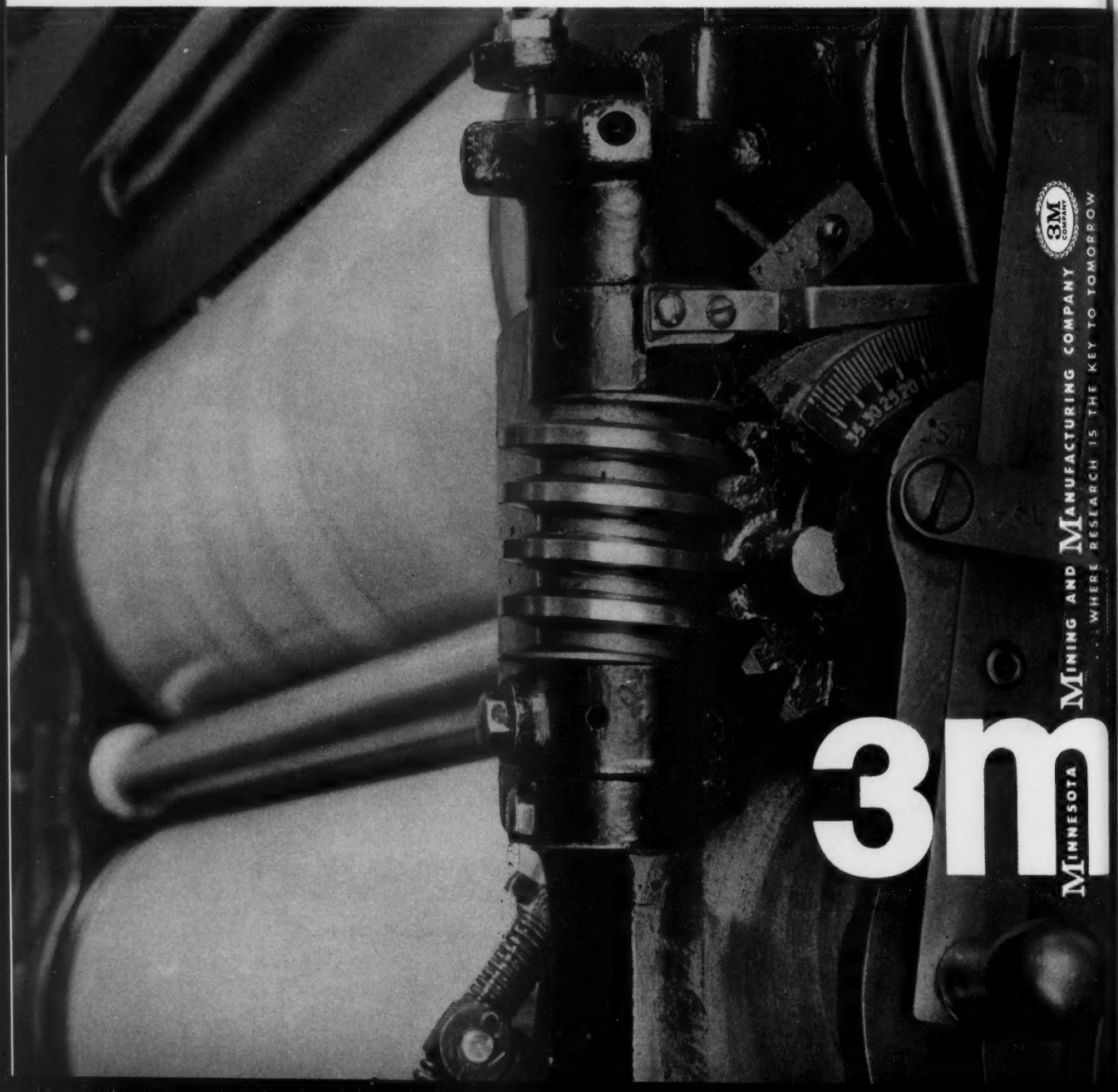

(*Continued from Page 69*)

receive no compensation. They accept office because they realize our industry needs the NALC, its members and its leaders.

The mid-season council meeting of the NALC will be held in Hartford, Tulsa and Oshkosh, Jan. 22 and 23. A one-hour telephone hook-up between the three cities will take place on Saturday. The question of a permanent headquarters and a permanent administrator will be brought before the Council for discussion. The delegates will be advised to bring this discussion before their boards of governors so that a decision can be made at the Boston convention in May.

The committee to advise the NALC and to seek ways and means to accomplish our goal is headed by W. Stuart Grau, of Chicago. He has sought opinions from each local club and the findings will be reported at the Council meeting.

The NALC officers and past presidents held a meeting in November at the NAPL convention in Kansas City. It was decided by this group, which included Al Rossotti, Al Tucker and Bill Stevens (all of whom helped to form the NALC), that we should not seek financial assistance from the suppliers but seek it from the NALC members and the lithographic industry. The reasoning behind this stems from the fact we are helping members and the members' firms primarily through the distribution of technical knowledge and information.

I have counselled with other graphic arts trade association officers. They are amazed at what we are accomplishing with such a small budget, poor liaison and lack of cohesive effort. We have come of age! It is time for NALC to assume full time administrative leadership. A permanent NALC officer will relieve the local secretary of many duties and will furnish more services to each and every Litho member and club.

Watch these pages for more information about your NALC. Our efforts need your concerted thought and help.

Brevities

THEODORE HOMMEL has joined Lanston Industries, Philadelphia, as vice president of its Unitronics division. He was formerly with Universal Match Co. which sold Unitronics, a subsidiary, to Lanston.

•

WILLIAM J. GRUNOW has been appointed factory sales representative by the Douthitt Corp., Detroit, manufacturers of photomechanical equipment.

•

PHILIP LITHOGRAPHING CO. has moved to 1960 Wisconsin Ave., Grafton Wis.

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3M's family of fine products for printers

■ From 3M research, from the skills and know-how of quality-minded production people, come—and will continue to flow—products designed to complement the craftsmanship of the most particular printer. Just as a platemaker or pressman uses his skills to produce the finest quality printing, 3M uses the skills of its research and manufacturing people to produce the finest possible quality products for printers.

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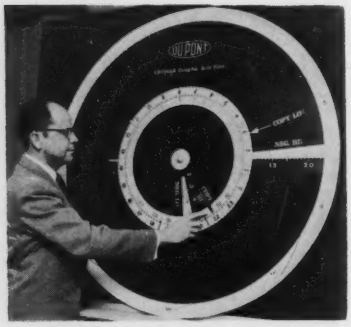
Dupont Developing Photographic Calculator

INTRODUCTION of an experimental model of a simplified graphic arts calculator on which photo shop craftsmen may "dial" correct exposure and development times for processing continuous tone negatives, reported in December M.L., was made at the NAPL convention by Karl L. Thaxton, Du Pont Photo Products technical representative.



Karl Thaxton demonstrates calculator

Speaking on "A New Approach to Exposure and Processing Control," Mr. Thaxton pointed out that photographic materials for the graphic arts industry are being manufactured to meet rigid specifications and, to get the most value out of these standardized products, users must develop scientific production controls at the shop level. Too often, he said, such controls now depend on the "educated guess" of the shop technician.

The Du Pont calculator starts with the premise that once light source and developer have been standardized, there is only one set of exposure and processing conditions that will give the desired result. Mr. Thaxton pointed out that, to make effective use of the computer, a shop must first establish controls over many of the variables that affect exposure and processing conditions — such as intensity of light source, temperature of development and type of developer, and degree of agitation. Since these conditions will vary greatly between shops, the calculator must also be standardized—or "zeroed in"—to the particular set of shop conditions where it is to be used.

To illustrate how the device works, Mr. Thaxton used a giant working model, four feet in diameter with black and white marked dials. These dials, he said, are set according to known values of the highlight and shadow densities of the original copy and rotated until the marker points to the desired negative highlight and shadow densities. The reading will then give the proper exposure time in seconds and development time in minutes.

Mr. Thaxton emphasized that as yet the model is only experimental and that it will take much additional work to make it practical for use in the average shop. Du Pont believes that this device can be perfected, he said, if there is sufficient interest in the trade. From the work done thus far at the company's Photo Products Laboratory at Parlin, N. J., according to Mr. Thaxton, it appears that the "circular slide rule" offers an unusual opportunity for cameramen to achieve shop controls which, in the long run, will pay off in higher production efficiency.

•

Serves 30 Years with Goss

William Zimmer, 336 South Illinois St., Villa Park, Ill., completed 30 years of service with the Goss Co., a division of Miehle-Goss-Dexter, Inc., Chicago, during December. He is chief engineer for the company.

•

Finch, Pruyn Advances Two

Samuel P. Hoopes has been appointed director of purchasing and William F. McGee, traffic manager, at Finch, Pruyn and Co., Glens Falls, N. Y., manufacturers of printing and converting papers.

•

ALA Honors Alois Lederer

Alois Lederer, a lithographer for more than 50 years, was honored Dec. 5 by Local 49 of the ALA in Houston, Tex., at the Local's 31st anniversary dinner.

Mr. Lederer was born in Baden, Germany and after immigrating to the U.S. became a member of the union in 1906, in New York.

•

Woodward Joins Nekoosa

J. C. Woodward has been assigned to the Twin Cities area following his completion of a sales training program with Nekoosa-Edwards Paper Co.

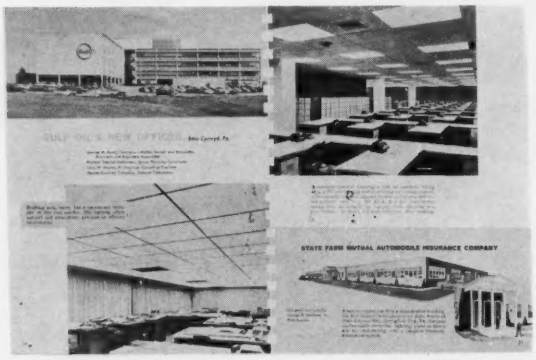
He will work in Nebraska, Iowa, the Dakotas and Minnesota.

Electrical Brochure Printed by Litho

Roley & Brooks, Philadelphia advertising agency, has written and designed a 62-page lithographed brochure in two colors, for the Harry F. Ortlip Co., electrical construction specialists in Philadelphia.

The brochure was lithographed by Independence Press, Philadelphia. It contains excellent illustrations of successfully-planned construction for industrial plants, office buildings, research laboratories, churches, schools, hospitals, utilities and the railroads. A section on automation and electrical construction is included.

Copies, while they last, may be obtained from Philip Evans, 50 North 18th St., Philadelphia.



Center Fold of the Ortlip Co. brochure, designed by Roley and Brooks agency, Philadelphia, and lithographed by Independence Press, Phila.

Printed Offset on Atlantic Offset, Regular Finish • Basis 80

The house was burning. Women and children trapped. You were doing ninety.

Did you save them?

Easily. *Anything* was possible the day your dad took you to the fire house and you climbed up on that shiny truck. What a proud moment!

It's really no different, is it, when a piece of good printing comes off the press? The halftones sharp. The colors sparkling.

Pride. We share it with you. Because good printing begins with good papers. And that's the only kind we make.

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Geo. W. Millar & Co., Inc.
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READING
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PROVIDENCE
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The Revolutionary New Process that Requires No Color-Separation Filters or Color-Correction.

Color lithography comes vibrantly alive with Fluoro-Color, the remarkable new process that cuts full-color plate costs in half. Illustrations gain a new richness, new vitality and more brilliance, truer fidelity to the original.

All this is possible because Fluoro-Color art is prepared with Fluorographic materials and pre-separated for color. Yet, it's rendered in *full* color, much as it will appear in print. Being Fluorographic, all whites are dropped without distortion of tone scale and all values reproduce as intended. Eliminated in platemaking are costly color-separation, color-correction, hand-opaquing and tedious masking.

You can substantially increase the amount of color work in your plant — and make more profit on the jobs you do ... with Fluoro-Color. Our big advertising campaign is selling Fluoro-Color to the buyers of lithography, so learn how you can share in this profitable business by sending the coupon below right now.

Plates made without [illegible] filters or color corrections.

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Fluorographic Sales Division
La Arcada Bldg., Santa Barbara, Calif.

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I'm convinced . . .
Solar's *the utility sheet*
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ALA Rejects Offer; S. F. Strike Goes On

FOUR weeks after the beginning of the strike against major San Francisco lithography plants, members of Local No. 17, Amalgamated Lithographers of America, considered but turned down a proposal for a new contract. The strike began Nov. 23 and originally involved the 15 companies that are members of the litho division Graphic Arts Employers Association. On Nov. 30 two more companies, both trade shops, were struck. They were the only two out of 115 non-Association shops under Local 17's jurisdiction which refused to sign an interim agreement with the union. Under this agreement, signed by the remaining 113 ALA shops in Northern California and Nevada, work continued under the terms of the contract that expired Oct. 18, 1959, but with the provision that the companies would accept whatever new contract was finally agreed upon by the Association and the union.

The contract that was rejected by union members on Dec. 19 would have left open the final decision on the hotly contested issue of secondary boycott. The vote was taken only two days before an NLRB case against the union came into the United States District Court in San Francisco. The NLRB filed charges against the union on the allegation that paragraphs concerning secondary boycott in the contract they had proposed to the employers are contrary to the Landrum-Griffin law; it asked an injunction requiring the union to cease striking over these proposals. The NLRB also alleged that the interim contracts are contrary to the new law and called four of the non-struck firms as witnesses.

According to Wayne C. Wade, association secretary, the Dec. 19 proposal to the local membership called for retention or exclusion of the paragraphs under dispute according to final decision as to their legality. It also called for wage raises somewhat lower than the union's demand of $10 weekly across the board for the first and $10 more for the second year of a two-year contract. A union spokesman stated that the membership had rejected the proposal because of this and other economic factors.

At press time, 2,000 men were involved in the strike. They are each receiving $50 a week from the union. The 15 San Francisco lithographic companies struck are The James H. Barry Co., California Printing Co., R. J. Cardinal Co., A. Carlisle & Co., H. S. Crocker Co., Hooper Printing Co., Jorgenson & Co., Lithographic Producers, Inc., Louis Roesch Co., Recorder Printing & Publishing Co., Schmidt Lithographic Co., Security Lithograph Co.,, Stecher-Traung Lithograph Corp., Chas. R. Wood & Associates, and U. S. Printing & Lithograph Co. (Lehmann Division). The two San Francsco trade shops are Balzer Shopes Litho Plate Co. and Color-Tone Reproductions.

The 113 plants which continued operation were mainly small and medium-sized lithography and combination shops. The only major San Francisco lithography firm among them was Schwabacher-Frey Co., which some months ago relinquished longstanding membership in the Association. Together these shops employ about 1,000 men.

At press time the NLRB case in the United States District Court was in progress. Pending also were charges filed with the NLRB by the Graphic Arts Employers Association relating to the union's withholding of overtime work during contract negotiations; and charges filed with the NLRB by the Amalgamated Lithographers No. 17 alleging that the employers refused to negotiate. — *Ruth Teiser and Catherine Harroun.*

•

Eureka Expands in Scranton

Eureka Specialty Printing Co., Scranton, has leased the former Acker Drill Co. plant at Seventh and West Lackawanna Aves., where packing, binding and storage operations will be started.

In addition to trading stamps, the company also prints tax and poster stamps, pressure sensitive labels and tapes, fund raising seals, certificates and many other types of paper specialties.

•

Williams Appoints Friend

Sumner Williams, Inc., Boston, has announced the appointment of Merrill N. Friend as technical manager. This new position has been established to provide supervision for all of the firm's engineering, process development and quality control.

Mr. Friend was formerly research and development manager for Spaulding-Moss Co., Boston lithographers. He has been active in Boston printing activities for many years. He is a past president of the Boston Litho Club, and is chairman of the education committee of the Boston Club of Printing House Craftsmen. He is also a member of the Technical Association of the Graphic Arts, and the Society of Photographic Scientists and Engineers.

Joseph Mazzaferri Dies

Joseph W. Mazzaferri, one of the best known and widely respected

J. W. Mazzaferri

authorities on dot-etching and platemaking in the lithographic industry, was one of the victims of the tragic Allegheny Air Lines plane crash Dec. 1 near Williamsport, Pa. Mr. Mazzaferri, who had just recently purchased the interests of his partners and become sole owner of the Colorcraft Co. (formerly Colorcraft Lithoplate Co.) Philadelphia trade platemaking firm, was 44.

Aside from the very active interest he had in his company, Mr. Mazzaferri was often called upon to take part in technical forums at national and local meetings, to write trade articles and to criticize technical manuscripts. He also taught at the New York Trade School, for which he wrote the curriculum on platemaking.

He authored several books for LTF and served on the Foundation's research committee for several years.

Mr. Mazzaferri planned the TAGA program for the meeting in Philadelphia several years ago. He was secretary of the Lithographers Association of Philadelphia and a past president of the Litho Club. After breaking into the industry in New York, he joined Graphic Arts, Inc., in Philadelphia in 1942 and in 1945 founded his own firm.

He is survived by his wife, two daughters and other relatives.

GAI to Meet in Philadelphia

Lithographers are among those being asked to participate in the 1960 Philadelphia Conference of the Graphic Arts Industry to be held at the Benjamin Franklin Hotel, March 26. The Litho Club of Philadelphia is among the sponsoring groups. Parent sponsor is the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry.

One of the main objectives of the conference is to create better understanding between makers and users of papers and to discuss problems. Printers will play leading roles in these discussions.

The conference will commemorate the 270th anniversary of the founding of the paper industry in America by Wilhelm Rittenhaus and the 275th anniversary of the establishment of the first print shop in the Middle Colonies by William Bradford.

•

Set LTF Meeting Date

The Lithographic Technical Foundation has announced that it will hold its annual members' meeting March 22 at the Conrad Hilton Hotel, Chicago. The annual meeting of the board of directors will also be held on that day at the hotel.

The research committee meeting will be held there March 23 and 24.

•

S. Cupples Scudder Retires

S. Cupples Scudder, president of Cupples-Hesse Corp., St. Louis, retired Jan. 1 after 41 years with the company.

Mr. Scudder, 62, started his career with the Samuel Cupples Envelope Co. in 1919. He was executive vice president when that company merged with the Hesse Envelope & Lithographing Co. He became president in 1938.

•

Stern Advances Laverghetta

Edward Stern and Co., Philadelphia, has appointed Dante Laverghetta as foreman of the composing room. Mr. Laverghetta has been with the company for 14 years. He replaces George Mueller.

John S. Beckham Advanced

John S. Beckham has been named general manager of Graphic Arts Press,

John S. Beckham

Inc. - Washington Planograph, Washington, D.C.

Mr. Beckham has been serving as plant manager of these plants for the past two years. He is a past president of the Printing Industry of Washington.

The appointment of Mr. Beckham coincides with a $750,000 expansion program undertaken by the firms which includes the purchase of new multi-color presses, folding machines, gathering and stitching equipment and an increase of 50 percent in their work force.

•

Schmidt Advances Marshall

Warren Marshall has been appointed sales manager of labels and packaging for Schmidt Lithograph Co., San Francisco. He was formerly sales manager of labels and packaging for Schmidt's northern California operations. He will now be responsible for the company's national and international packaging sales.

•

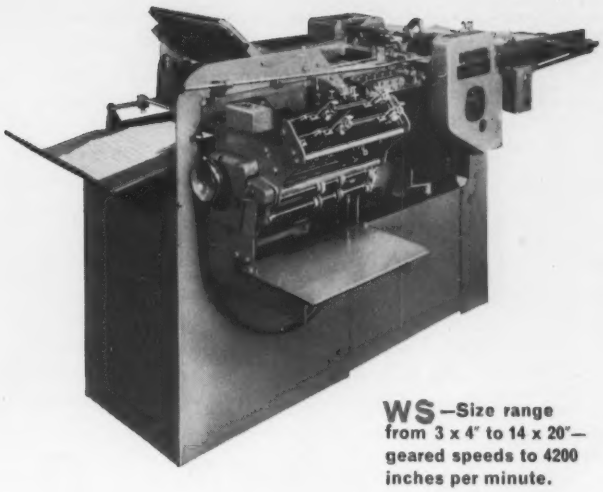
Buys Silk Screen Plant

Mayo Brothers, Inc., Dallas, Texas, printing and lithographing company, has acquired a local silk screen organization, Adams Silk Screen Studio.

The acquisition enables the company to become one of the few firms in Dallas offering all three forms of printing within a single organization.

A 20 per cent increase in total sales is anticipated during 1960, the company reports.

now 2 new high speed folders from Dexter



WS—Size range from 3 x 4" to 14 x 20"—geared speeds to 4200 inches per minute.

The new WS and AS Dexter (Cleveland) Folders are specifically designed to profitably handle the output of high speed small presses. Modern in every way, these new folders give you exceptionally efficient production. No wonder they're the "choice of the pros"...just look at all the advantages you get:

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Write or call for more details today!

AS—Size range from 3 x 4" to 18 x 24"—geared speeds to 4200 inches per minute.

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Chicago 8, Illinois

Visual Communications Congress

The third annual Visual Communications Congress, sponsored by the Society of Reproduction Engineers was held Dec. 3-5, at the Hotel Biltmore, New York. The congress featured a series of panels and speeches by leading persons in the field of graphic reproduction and approximately 80 exhibits of products by major manufacturers in the field.

The Dec. 3 session included a panel discussion of "What's New in Electrostatic Printing and Date Processing," with John Rydz, Radio Corp. of America; Glendon T. Gerlach, A. B. Dick Co., William Amon, Keuffel and Esser Co.; J. L. Tregay, Charles Bruning Co.; and Gordon L. Johnson, Stromberg Carlson Co., on the panel.

N. N. Freling, Philips Petroleum Corp., spoke on "Drafting and Graphic Reproductions," at the afternoon session.

The Friday panel, led by Maynard Mann, Secretary of State's Office, Atlanta, Ga., discussed "Miniturization and Retrieving." Panelists were William Carney, Kalvar Corp.; John Tupper, Paragon Revolute; C. B. Collins, Neoflow; C. B. McCollough, Haloid Xerox and David Woodrow, Minneapolis Mining and Mfg. Co.

Among the many firms exhibiting were American Type Founders, Davidson Corp., DuPont Co., Eastman Kodak Co., Gevaert Co., Hamilton Mfg. Co., Philip A. Hunt Co., Lanston Monotype, Minnesota Mining and Mfg. Co., Nuarc Co., Ozalid Division of General Aniline and Film Corp. and Robertson Photo-Mechanix.

•

NLRB Lauds ALA

The chairman of the National Labor Relations Board recently cited the Amalgamated Lithographers of America for its "foresight and enlightened approach" to the problem of introducing new production equipment in the lithographic industry.

Speaking on the topic "New Horizons in Labor-Management Relations" at New York University, Dec. 5, Boyd Leedom pointed out that the lithographic union had, after a year's trial, made permanent a committee dealing with new equipment and new methods developing in their industry. "This group finds out all it can about new equipment through close contacts with employers and manufacturers. It then informs the union members what changes may be expected in their field. Finally, it works with local unions and employers to accomplish the changeovers with as little human dislocation as possible."

•

S&V Opens Fla. Plant

Sinclair & Valentine Co., New York, has announced the opening of an ink manufacturing facility in Miami, Fla., which will make and sell the company's line of general printing inks.

The plant, at 600 W. 18 St., Hialeah, will be under the management of A. M. Shapiro, formerly a sales representative of the company.

•

Herbick & Held Opens N.Y. Office

Herbick & Held Printing Co., Pittsburgh, opened an eastern regional office in New York, Dec. 16.

The office, at 437 Fifth Ave., is managed by E. P. Pattberg.

Another Addition to
THE "NEW LINE"
TEMPERATURE CONTROLLED DEVELOPING SINK
MODERN, ALL-ENCLOSED, STREAMLINED DESIGN—BUILT AS ONLY DOUTHITT CAN BUILD THEM
TYPE DDC
• REFRIGERATED STORAGE AREA
• 316 STAINLESS STEEL ON ENDS AND FRONT
• OPTIONAL DUMP TROUGH AND BACK SPLASH
• OVERHANG TO PREVENT CHEMICALS FROM RUNNING DOWN
As modern as tomorrow, as streamlined as a rocket, as sturdy as Douthitt ever made a sink—here's the latest addition to the "Douthitt Professional Line" of photomechanical equipment. Completely re-engineered from stainless steel sink top to convenient toe space, this new sink has been designed for quick, clean operation; day in, day out dependability; and long, useful service.
Competitively priced, the Douthitt Temperature Controlled Sink offers many outstanding features as standard equipment, including safety control to protect entire system, refrigerated storage area, heating as well as cooling to maintain constant temperature the year 'round. Optional accessories available include extension bracket for extra tray, light table for negative viewing, dump trough and back splash guard, and temperature controlled storage cabinet. Made for film sizes 20 x 24", 26 x 30", and 30 x 40".
Here it is! It has everything! Call your local dealer or write direct for literature.
40 YEARS OF ACHIEVEMENT IN PHOTOMECHANICS
Douthitt CORPORATION
680 E. FORT STREET • DETROIT 26, MICHIGAN

REPRODUCED IN 4 COLORS BY OFFSET LITHOGRAPHY ON TICONDEROGA OFFSET, BASIS 80, SHEET SIZE 39 X 59, PRINTED 18 UP AT 4,000 IPH.

Pictures become people when they're printed on International Paper's Ticonderoga Offset

(Why use a more expensive paper when you can get results like this?) TURN PAGE ➡

What you should know about TICONDEROGA OFFSET

—a leading member of International Paper's first family of fine papers.

TICONDEROGA OFFSET brings *life* to multicolor and monotone offset printing. Just examine this insert. It demonstrates itself. Bright, brilliant four-color reproduction on one side. Realistic black and white on the other.

Ticonderoga Offset's smooth, level surface takes ink perfectly, gives quality reproduction without glare. Its controlled porosity keeps colors on the *surface*. Pictures snap and sparkle.

This flexible offset printing paper gives dependable press performance. Handles easily. Requires no pampering. You save time and money—and get outstanding results as well.

Ticonderoga Offset is ideal for brochures, travel folders, book jackets, programs, menus, catalogs, inserts—any job that must combine quality with economy.

Ticonderoga Offset is now available in ten standard sizes and five weights. Seven fancy finishes, made to your order.

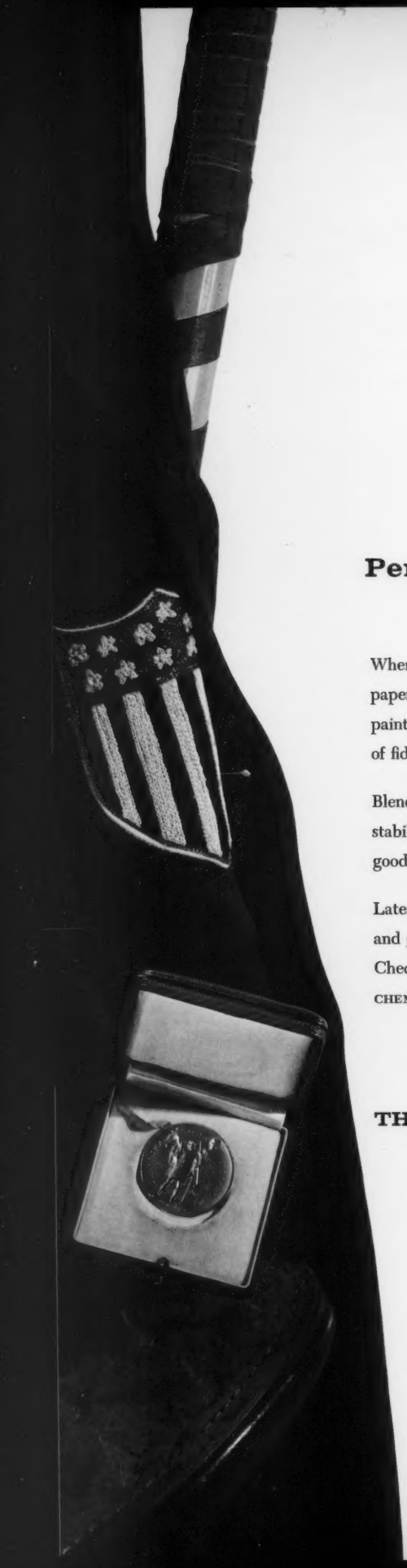
Ask your paper merchant for information about Ticonderoga Offset and the other printing grades in International Paper's *first family of fine papers.*

Fine Paper Division **INTERNATIONAL PAPER** New York 17, N. Y.

A legend comes to life on latex coated paper

Jim Thorpe needed no fictional embroidery to add luster to his legendary accomplishments. His historic sweep of both decathlon and pentathlon in the 1912 Olympics stamped him as an athletic marvel. After twenty years in football, he was recognized as the greatest player of the century. He was good enough at baseball to win a contract from the New York Giants. Whatever the game, you could depend on Thorpe to deliver. Latex coated papers, too, deliver standout performances every time. For reasons why, turn the page.

DOW



LATEX COATED

Performance counts . . . in sports and in printing

When quality is the watchword, more and more jobs are being put on latex coated papers. The outstanding features of latex coatings are demonstrated in the Jim Thorpe painting and the photography on the front of this insert. Note the high degree of fidelity, the sharp detail and the range of brilliant and subtle tones.

Blended with other coating materials, Dow Latex provides excellent dimensional stability and fracture-free folding. It also provides closely controlled ink receptivity and good resistance to water.

Latex coatings are now available on a wide selection of quality papers in both dull and gloss grades, for both letterpress and offset. Why not test its performance yourself? Check with your paper supplier or write to us for specific information. THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 2327.

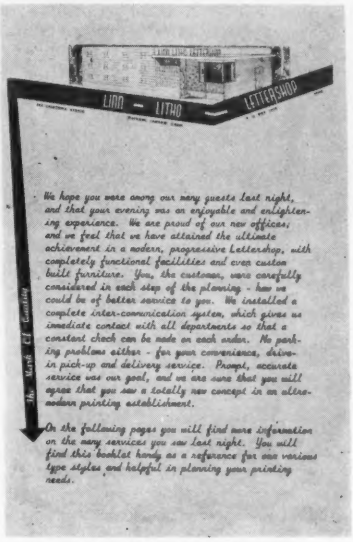
This four color 150 line screen reproduction is printed on 100 lb. Offset Enamel. Olympic Medal and Blazer courtesy Ralph C. Craig.

DOW

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

Reno Lettershop Proves It's Speedy

LINN LITHO LETTERSHOP of Reno, Nev., recently celebrated


LINN — LITHO — LETTERSHOP
We hope you were among our many guests last night, and that your evening was an enjoyable and enlightening experience. We are proud of our new offices, and we feel that we have attained the ultimate achievement in a modern, progressive Lettershop, with completely functional facilities and even custom built furniture. You, the customer, were carefully considered in each step of the planning - how we could be of better service to you. We installed a complete inter-communication system, which gives us immediate contact with all departments so that a constant check can be made on each order. No parking problems either - for your convenience, drive-in pick-up and delivery service. Prompt, accurate service was our goal, and we are sure that you will agree that you saw a totally new concept in an ultra-modern printing establishment.
On the following pages you will find more information on the many services you saw last night. You will find this booklet handy as a reference for our various type styles and helpful in planning your printing needs.

Followup letter from Linn shop.

completion of its newly equipped plant by inviting 250 local business people to an open house. Next morning, when the guests arrived at their respective offices, each found on his desk a leaflet beginning, "We hope that you were among our many guests last night and that your evening was an enjoyable and enlightening experience. . . ." Tucked inside was a page of photographs of guests, taken at the party and speedily reproduced. The device dramatized Linn's speedy service.

The leaflet itself, an eight-page stapled booklet prepared and lithographed in advance, has also proved an effective business builder, according to the company. First page copy lists Linn's new facilities, which had been demonstrated in action to the guests. Other pages describe the plant, including customers' conference room, cold type composition department, camera and darkroom, pressroom, bindery and mailing department. The final two pages are devoted to samples of available type styles.

The Linn Shop is an outgrowth of a Reno business college which Mr. and Mrs. Otto Linnecke took over in 1933. About seven years ago they started offering simple business reproduction service with a single mimeograph machine in the school. The next year they added a Vari-Typer, then a Multilith 1250, then a camera. By last spring it was clear that the business had outgrown the original establishment and needed a new one.

Equipment in the new plant includes IBM typewriters, a Vari-Typer, a Cox-Headliner, an Auto-Typist, a Robertson 320 camera, standard Xerox flat plate equipment, a Nu-Arc Rapid Printer, two 1250 Multiliths, and a Model 1900 Addressograph.

Customers include not only local business people but government offices and local printers and lithographers as well.

•

Printing from Punched Cards

New techniques used by the U.S. Navy to produce printed matter from tabulating cards and to store whole pages of forms on microfilm inserted in aperture cards are discussed in a 12-page reprint available from the Filmsort Company, a division of Miehle-Goss-Dexter, Inc., 2011 Hastings St., Chicago.

Called "A Line, A Page, A Publication—The Navy's New Design in Printing," the article was prepared by A. N. Spence, director of publications, U.S. Navy.

The reprint itself was partially produced by this method and is representative of its characteristics. Punch cards containing lines of type were fed into a machine that counts the proper number of lines to form a column of type. Then, automatic cameras photograph the lines of print. The resultant photographic negatives were opaqued and stripped to form pages from which offset plates were made.

•

Frye and Smith Building Plant

Frye and Smith Ltd., San Diego, has started construction of a 20,000 sq. ft. building in that city. The company plans a $250,000 investment with dust proof air conditioning for its litho operations.

Pitman Appoints Robinson

Clyde M. Robinson was appointed in December to the sales staff of Harold M. Pitman Co., Chicago.

Mr. Robinson was formerly a tech-

Clyde M. Robinson

nical representative for Eastman Kodak Stores, Inc., in Milwaukee.

•

Royal Zenith Moves in LA

The West Coast headquarters of the Royal Zenith Corp., have been moved to new, larger quarters at 1350 Broadway, Los Angeles.

The new location will constitute the regional sales and service center for the company's lines, including the 23, 25 and 30" Royal Zenith single-color offset presses, Misomex automatic step-and-repeat machines, Hunter-Penrose Autoscan color separator, Hohlux vertical and horizontal process cameras, paper cutters and other graphic arts equipment.

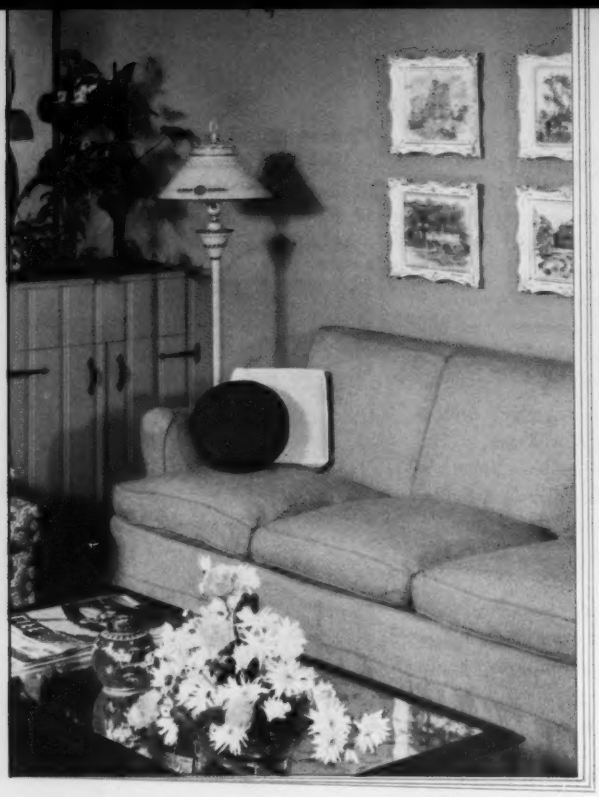
•

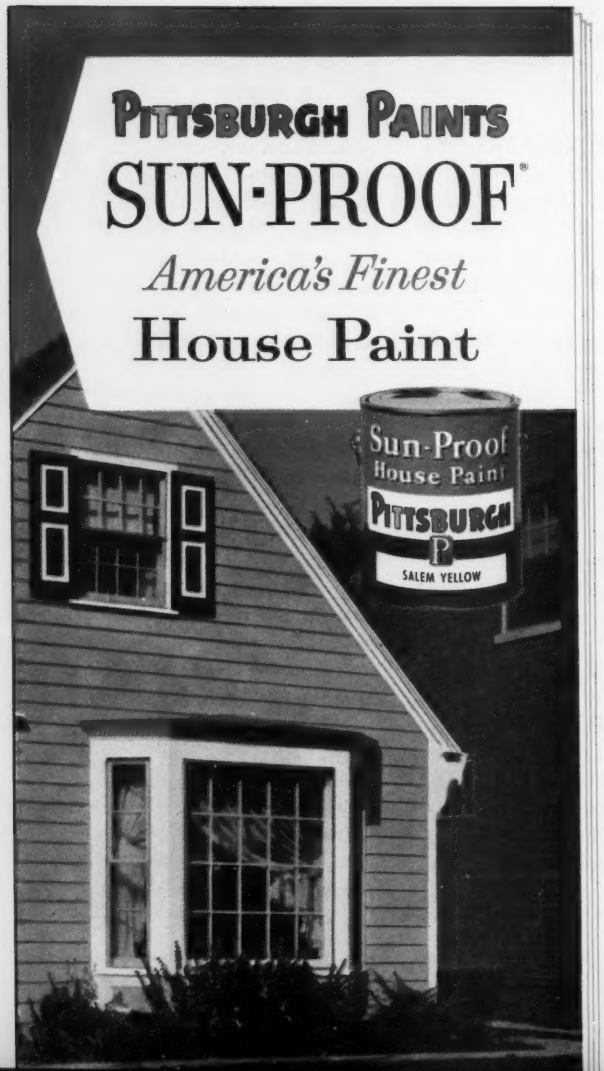
Champion Appoints Three

Donn G. Coleman, former Chicago district sales office representative of The Champion Paper and Fibre Co., Hamilton, Ohio, has been named president of Dwight Brothers Paper Co., Milwaukee, a Champion paper merchandising subsidiary.

He succeeds Norman W. Milner, who has been recalled to Champion's general office in Hamilton, to take the newly created position of product manager of merchant papers.

Richard A. Burton, general manager of Dwight, was appointed secretary-treasurer. James A. Austin remains as executive vice president.





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The Pittsburgh Plate Glass Company's series of decorator booklets was run on a five-color Miehle 52 x 76 offset press. Sheet size was 52 x 56½. Strobridge Lithographing Company, Cincinnati, used 100# basis Sterling Offset Enamel for this job.

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This

show your TRUE COLORS!

Sparkling decorator booklets tell the whole truth about Pittsburgh Paint colors... show them off to full advantage on West Virginia's Sterling Offset Enamel. The paper itself helps to sell the paint.

One big reason is the complete stability of Sterling Offset Enamel. Moisture control is maintained on the machine, in the finishing room and in transit to lithographers through moisture-barrier packaging. Result? Your paper arrives with the dimensional stability required for close register and maximum runnability.

What's more, Westvaco's Sterling Offset Enamel has extraordinary gloss and bright whiteness. Leading lithographers recognize this grade for unmatched performance.

The West Virginia family of fine papers gives you unusual quality and economy for your printing jobs. Add to this the benefits of West Virginia's direct mill-to-you sales policy and service, plus the finest technical assistance available. For full details write to West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y., or contact an office listed below.

Fine Papers Division
Commercial Printing Paper Sales
Chicago 1 / FR 2-7620; New York 17 / MU 6-8400
Cincinnati 12 / RE 1-6350; Philadelphia 7 / LO 8-3680
Detroit 35 / DI 1-5522; Pittsburgh 19 / CO 1-6660
San Francisco 5 / GA 1-5104

West Virginia Pulp and Paper

This insert is lithographed on Sterling Offset Enamel, 25 x 38 — 80#

Issue Platemakers Customs

Trade customs defining the relationship of trade-platemakers and their customers have been issued by the Lithographic Platemakers Section of the LPNA.

The specific practices of the lithographic trade platemaking industry are spelled out in nine provisions, covering orders, experimental work, specifications and color proofs, estimates, alterations, responsibility for metal, responsibility for negatives, positives or press plates, storage of customer property and delays in delivery.

The trade customs were formulated by the LPNA Platemaking Section under chairman James M. Ludford, Chicago Litho Plate Graining Co., Chicago. Other committee members include Harold Balzer, Balzer-Shopes Litho Plate Co., San Francisco; Saul Bell, The Bell-Hortenstine Co., Cincinnati; E. Bartlett Brooks, Wayne Colorplate Co., Dayton; Dante V. Mazzocco, Eureka Photo Offset Engraving, Inc., New York City; Thomas Stevenson, Stevenson Photo Color Co., Cincinnati; and LPNA Staff Representative Boris J. Speroff.

The trade customs may be found in the box at the right.

LPNA Trade Platemakers Customs

1. *Orders* — Regularly entered orders cannot be cancelled except on terms that will compensate the lithographic platemaker against any losses incurred (for any material purchased or services performed).

2. *Experimental Work* — Experimental work performed at customer's request, such as sketches, drawings, negatives, positives, plates, proofs and materials will be charged for at current rate.

3. *Specifications Estimates* — All estimates based on visuals, rough dummies, sketches, copies, etc. whether accompanied by verbal or written specifications, shall be considered only tentative. Estimates are subject to revision upon inspection of the finished copy. Customer will be notified of price changes, if any, before the job is put into work.

4. *Color Proofs Estimates* — When color proofs are specified, estimates will cover the cost of six (6) proofs and one progressive. An additional charge will be made for extra proofs and progressives.

6. *Metal* — On metal furnished by the customer, the platemaker is not responsible for metal imperfections found after the plates are finished.

7. *Responsibility* — Customer must examine all negatives, positives or press plates before allowed to go to press. The platemaker's sole responsibility is to correct his product and remedy his errors. Under no circumstances is the platemaker liable for loss of press or bindery time, paper or ink.

8. *Storage of Customer Property* — All customer's property — positives, negatives, etc — that is stored with the platemaker is at the customer's risk, and the platemaker is not liable for any loss or damage thereto caused by fire, water, leakage, breakage, theft, negligence, insects, rodents, or any other cause beyond his control.

9. *Delays in Delivery* — All agreements are made and all orders accepted contingent upon strikes, fires, accidents, wars, floods, or other causes beyond the Lithographic Trade Platemaker's control.

•

WNYPIA Review Check Printing

The Printing Industries Association of Western New York has warned its members in the check printing business that they face new problems as a result of a shift by banks to uniform size checks with magnetically imprinted numbers.

The association recently sent a bulletin to the membership pointing out that check printing in the past presented no serious problem. Certain size limits were set for checks, and a general form was observed, "but essentially it was just a printing job."

Now, however, the revolutionary change in bank procedure will greatly affect the check printing business. To speed up operations and insure greater accuracy, banks are installing electronic clearing of checks, the booklet continued.

The association will soon supply its members with detailed data on specifications and requirements for producing checks to meet the new requirements.

•

PII To Move Offices

Printing Industry of Illinois is to begin early this year the task of transferring its activities from its North Wabash Ave. location of many years to newly leased quarters in the Graphic Arts Building at 12 East Grand Ave. The association and its affiliates, including the Lithographers Association, will occupy the entire first floor. Open shop printers will have an employment office on the ground floor and the Franklin Association, bargaining agency for union letterpress shops, will occupy the second floor. Modern classrooms for PII's educational program will have folding partitions, making it possible to arrange a large auditorium when needed for the frequent industry seminars and for meetings of other graphic arts groups.

Funds willed to the Association by the late Charles M. Stewart of Stewart & Fryer, offset printers, to further the educational program, will be used for new equipment.

•

Crown Expands in Southwest

A new Southwest regional sales office, with headquarters in St. Louis, has been announced by Crown Cork and Seal Co., Inc. In addition to its former sales territory in Missouri, Southern Illinois, and Iowa, the new division adds Texas and Arkansas.

L. S. Martin, formerly St. Louis district sales manager, has been appointed regional sales manager of the newly-established region. E. E. Blust has been named sales manager.

At color time

Get multi-color effects with only two printing inks!

This wheel has been printed on Cantine's Esopus Tints Cover-Bristol (Canary) with General Printing Ink's Offset Split-Sec Red ER-4125 and Blue ER-4126 to simulate three-color process work and achieve four-color effects with only two impressions!

If you want to know how imagination and experience can help you get the most mileage out of your graphic arts dollar — we'll be glad to tell you all about our full line of GPI letterpress, lithographic, gravure and BBD flexographic printing inks. Simply call, write.

GPI Sun

Branches in all principal cities

GENERAL PRINTING INK

DIVISION

Sun Chemical Corporation

750 Third Avenue, New York 17, N. Y.

multi color with fewer impressions

Cantine's Esopus Tints Text and Cover stocks combine novelty and beauty with economy. Along with superb halftone printing quality, they give the effect of two-color printing with only one press impression, or three colors with two impressions. Equally printable by both letterpress and offset.

This insert is printed by offset on Cantine's Esopus Tints Cover-Bristol 20 x 26 — 80 (160M) Canary.

Illustration adapted from painting by Hon Chew Hee, Honolulu.

Red and Blue Inks by General Printing Ink Co., Div. of Sun Chemical Corp. 4,000 sheets per hour.

Coated **ESOPUS TINTS**

The MARTIN CANTINE Company, Saugerties, N. Y.

Specialists in Coated Papers since 1888

ESOPUS TINTS TEXT

Canary, Green, Blue, India, Pink, Peach, Goldenrod

Basis	23x35	25x38	35x45
70	118	140	232
80	.....	160	266

ESOPUS TINTS COVER-BRISTOL

Canary, Green, Blue, India, Pink, Peach

Basis	20x26	23x29	23x35	26x40
80	160	205	248	320

Shapiro Addresses Teachers Group

CHARLES SHAPIRO, educational director of the Lithographic Technical Foundation, was one of the more than 600 speakers on the program of the American Vocational Association, during its 53rd annual convention in Chicago, Dec. 7-11. Mr. Shapiro addressed a sectional meeting of graphic arts vocational teachers on "What's New in Graphic Arts Technology." Another feature of the same session was a report on "New Achievements in Graphic Arts Education," presented by Samuel M. Burt, executive secretary of the International Graphic Arts Education Association. Mr. Burt also served as co-chairman of this meeting.

At another sectional meeting on graphic arts education, sponsored by the Illinois Vocational Association, Milford M. Hamlin, technical consultant with the Graphic Arts Equipment Co., Chicago, talked on "Type Tells The Story." Scheduled also on this program was Rush Blair, of Midwest Equipment and Lithograph Supply Co., Peoria, Ill. Among other printing aspects at the meeting was a demonstration of silk screen printing by a Decatur, Ill., vocational high school instructor, John Kitchen.

More than 4,000 administrators and teachers of vocational courses in the nation's public high schools and junior colleges registered for the Chicago meeting. About 3,000 schools offer courses in printing in their trade and industrial training departments.

Prominent in the huge exposition at the Conrad Hilton Hotel was a booth manned by the International Graphic Arts Education Association, Washington, D. C., with Mr. Burt, executive secretary, in charge. Here 20 manufacturers of printing presses and other graphic arts equipment and supplies, pooled their efforts to show products and services they supply to public school education.

The 20 members of the cooperative were American Wood Type Mfg. Co., American Type Founders, Inc., Anchor Chemical Co., Challenge Machinery Co., Chandler & Price Co., Eastman Kodak Co., Fairchild Graphic Equipment, General Binding Corp., Harris-Intertype Corp., Heidelberg Sales and Service, Inc., Imperial Type Metal Co., Lanston Monotype Co., Ludlow Typograph Co., Miehle-Goss-Dexter, Inc., Minnesota Mining & Mfg. Co., Miller Printing Machinery Co., H. B. Rouse & Co., Simco Co., Vandercook and Sons, Inc. and Zimmer Printers Supply Co., Inc.

•

PATRA Conference Announced

PATRA, the Printing, Packaging and Allied Trades Association, in England, has announced a lithography conference to be held Jan. 31 to Feb. 3, in Harrogate.

More than 30 papers, covering the various fields of lithography are planned.

Among the talks announced for presentation are "Bad Copy — What Shall We Do About It?", F. G. Cackett; "Correction of Colored Photographic Originals for Reproduction," J. Wells; "Practical Masking Methods," D. C. Gresham; "The Use of Contact Screens," J. Halliday; "Platemaking Headaches," A. F. Waters; "Coating Solutions and Etches," A. H. Smith; "The Use of Coated Papers in Offset," G. L. Whitehead; "Paper Handling and Air Conditioning," Miss E. J. Pritchard; "Phototypesetting," H. O. Smith; "The Ink Water Balance in Lithography," Dr. W. H. Banks; "Simple Electronics for Printers," G. S. Allen and "The Time-Life Scanner," G. Card.

All the papers to be presented at the conference have been photocomposed, using four different systems—Monophoto, Fotosetter, Linofilm and Photon, PATRA reports. The conference papers, which are to be lithographed by Percy Lund, Humphries & Co., Ltd., will be included in a bound volume containing full reports of the discussions.

The setting of the conference proceedings by the four principal photocomposition methods is believed to be the first time that four filmsetting media will be seen side by side in a sizeable publication.

•

El Arte Tipographico Sold

Graphic Magazines, Inc., Garden City, N. Y., has acquired the graphic arts magazine, *El Arte Tipografico.*

The magazine, a Spanish-language quarterly, has been published for over half a century by National Paper & Type Co., New York graphic arts exporting concern. It has a circulation of more than 6,000, reaching firms in all Latin American countries, engaged in letterpress, offset, photoengraving, newspaper and magazine publishing, and package printing.

•

New Headquarters for TAPPI

The Technical Association of the Pulp and Paper Industry has moved to new and expanded quarters at 360 Lexington Ave., New York, The Association had been located previously at 155 East 44th St.

The new headquarters provides double the facilities available previously, TAPPI reported.

•

Sun Buys Ink Company

Sun Chemical Corp., New York, has purchased the stock and business of the Steel City Printing Ink Co., Pittsburgh.

The company has added nine new printing ink plants during the past 12 months.

The newly-acquired company will operate as a unit of General Printing Ink Co. - Midwest. The Pittsburgh operation will be headed by the former owner, Raymond H. Meister.

•

St. Louis GAA Open House

About 100 members recently attended an Open House at the headquarters building of Graphic Arts Association, St. Louis. Purpose of the open house was to introduce James Fitzpatrick, Jr., the new general manager of the association, to the 139 printing company members and the 74 associate members. The open house also gave members an opportunity to tour the headquarters building. Offices are on the first floor and a series of meeting rooms on the second floor.

Pitman Issues Graphic Arts Periodical

HAROLD M. PITMAN Co., 33rd St. & 51st Ave., Chicago, recently began publication of a monthly

PITMAN PARADE

PUBLISHED BY THE HAROLD M. PITMAN COMPANY

Offset Plate Preparation Studied by Army Engineers

Ekalith Method Introduced for Offset Reproduction

German Nylon Plate To Be Marketed in U.S.

Ultramodern Plant Being Built for Meredith Publishing Co.

Front page of recent issue of **Pitman Parade.**

newspaper entitled the *Pitman Parade*. It is distributed to 8,200 persons in the graphic arts industry and is designed to inform them of developments both in the Pitman company and in the graphic arts industry as a whole. The latest edition of the paper is for November, which is number three in the series.

Among the articles contained in the six-page edition are articles on the study of offset plate preparation by the Army Corps of Engineers, training of printers in the Soviet Union and the development of a Nylon paper in Japan.

The article on plate preparation experiments by the army explains a number of methods tried by the map reproduction branch of the Corps of Engineers to discover a better method for preparing plates for offset in the field.

The article states that after repeated efforts the engineers finally hit upon using a hand floor-polishing brush to resurface used plates for reuse in the field units of the Engineers' corps.

The article on Soviet training of printers states that around 24,000 skilled printers will be trained during the five-year plan which ends in 1960.

The November edition also mentions the new Kodak Ekalith method of producing offset paper masters and the new music typewriter.

•

3M Plates Demonstrated

Minnesota Mining & Manufacturing Co.'s new series of presensitized offset plates were demonstrated to 250 Chicago printing plant proprietors and superintendents at a Nov. 24 seminar sponsored by Printing Industry of Illinois. "Mike" Michaelson, midwest manager for 3M, presented a working demonstration of the new Type "L" plate designed for small offset presses and duplicating machines, and the Type "S" plate. The company's graphic arts research program and what is hoped to be gained from it over the next four years was also outlined by 3M representatives.

Other monthly PII seminars to come will deal with estimating, personnel problems, ink and paper problems and industrial engineering for printing plants.

•

Manz Corp. Elects Howard

Manz Corp., Chicago offset and engraving concern, has announced election of Darwin Howard as president. He comes from Murphysboro, Ill., where he had been president of the Lustor Corp. Lester A. Neumann has been named executive vice president, John Dodereau, general manager and H. H. McMurtie, superintendent of the offset division.

•

Printing Education Needed

Hopes of interesting more schools in teaching printing were voiced here when the Cleveland Graphic Arts Council held its annual dinner for teachers on December 1. The dinner was attended by 45 school teachers and officials and 12 printing industry leaders. Printing is taught in 25 of Cleveland's senior high, junior and special schools.

Guests from the Cleveland school system included John Fintz, assistant superintendent for special schools; Alva R. Dittrick, assistant superintendent for junior and senior high schools, and Frank C. Moore, directing supervisor of industrial arts.

•

RIT Plans Q.C. Program

The 10th annual program of Quality Control for the Graphic Industries will be held at Rochester Institute of Technology, June 6-10.

The program, stressing the measurement and control of printing quality, is specially designed for buyers and producers, management and sales executives from the fields of printing, lithography, paper converting, folding cartons, paper printing inks and publishing.

•

Folding Box Judges Named

Judges who will select the "100 Best" folding cartons of the year in the Folding Paper Box Association's annual contest have been announced. The panel to judge the "Technical Superiority of Printing" category includes Frank Boughton, flexographic consultant, Chicago; Wm. O. Morgan, *Graphic Arts Monthly*, Chicago; Robert E. Rossell, R & E. Council, Washington, D. C.; Homer E. Sterling, Carnegie Institute of Technology, Pittsburgh; and Edward L. Tollefson, Foote, Cone & Belding, Chicago advertising agency.

Seventeen other packaging specialists have been named as judges of the contest's three other categories, covering "Superiority of Construction," "General Merchandising Superiority," and "Best Example of Potential New Volume Use."

Announcement of winners and a display of all entries in the competition will be made during the FPBA's convention in Los Angeles March 21. A second public display will be made at the Drake Hotel, Chicago, March 30-31 and a third is scheduled for April 12-14 at the New York Coliseum.

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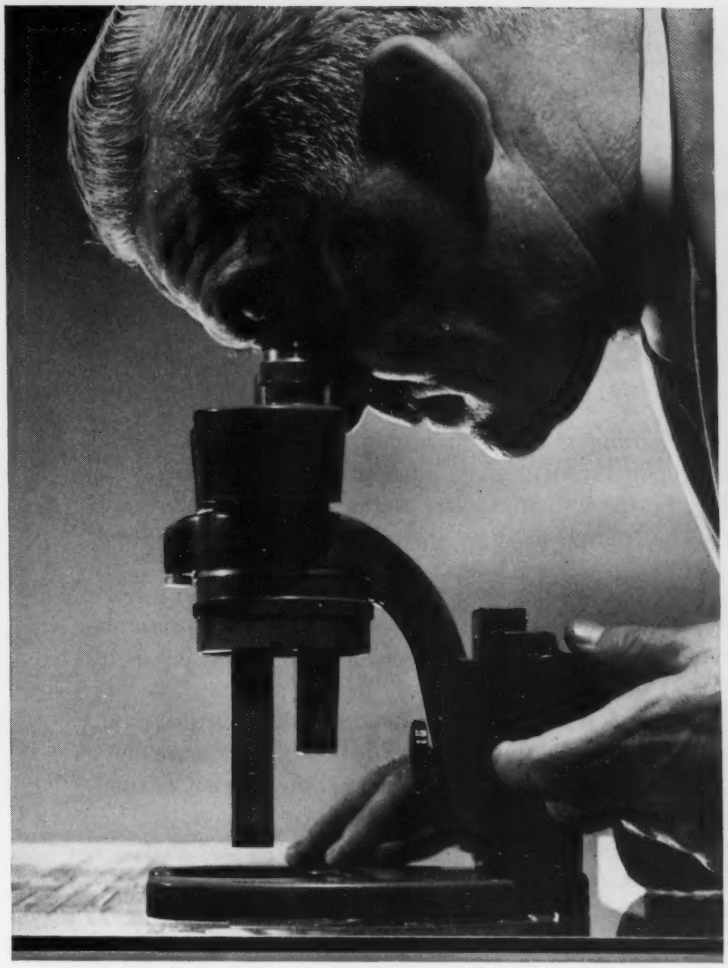
GPI Buys Texas Site

General Printing Ink Co., a division of Sun Chemical Corp., New York, has announced the purchase of a four and one-half acre plant site midway between Dallas and Fort Worth, Tex.



there's
more to this
than meets
the eye..

New Kodalith Ortho Type 3 Emulsion now on glass plates

A look at your camera work with this *wide-latitude* emulsion and your experienced eye tells you that this is the greatest improvement upon glass since Kodalith Ortho Plates.

You'll see that this emulsion is versatile enough to handle any kind of copy, *regardless of its contrast range.* You'll see beautiful results, line or halftone.

You'll see crisp, unveiled contrast . . . blacker line than ever . . . harder halftone dots . . . unsurpassed dot density. And Type 3 dot-etches better than any emulsion you've ever tried. The same good results no matter what you're reproducing.

But there's more to Type 3 than meets the eye.

Plate-after-plate Kodak *uniformity,* for instance. Uniformity that comes from stringent personal attention to quality-producing details. Uniformity you can't see but which you know is in every Kodak emulsion, to give you consistently good results. Results you can *predict* today, tomorrow, next year—any time.

Become familiar with Type 3 emulsion, on plates or on a variety of film supports. The same good results on any support. You'll find Type 3 fits your techniques, eliminates guesswork, seems to cooperate with you more than other emulsions do—to give you fewer disappointments than you've ever had before.

What base suits you best? Plates, any size, .060" to 3/16" thick. Stable PB, regular or thick base. Acetate, regular or thin base. And these are only the beginning . . .

Want a demonstration? Write:

Text for this advertisement was set photographically.

Graphic Reproduction Sales Division

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak
TRADE MARK

An Open Letter

To M. L. Subscribers:

THE scandal attending the disclosure of some of the things that have been going on in TV has severely shaken the faith of a large section of the American public in advertising. Those who collaborated in the various frauds that have been exposed bear a heavy responsibility.

Lest we might be accused of adopting a "holier than thou" attitude, we hasten to admit that there are abuses, too, in the magazine publishing business,—even an occasional version of "payola". Fortunately, however, the nature of the publishing business guards against abuses as flagrant as those that have taken place in these other industries.

Particularly in the case of the paid circulation magazines—to which principle MODERN LITHOGRAPHY is dedicated—the basic decisions are in the hands of the reader. We in the business of publishing paid circulation magazines *serve our subscribers first*—not our advertisers. We control and produce our own program, which consists of our editorial content. Then, if it is valuable enough to our readers to attract and sustain their continued interest,—we have something to sell our advertisers—that interested readership. But reader interest is our prime concern, for in the final analysis it is the decision of our subscribers as to whether or not any paid circulation magazine stays in business. The same cannot be said, obviously, of publications distributed on a free, non-subscription basis.

The view that the subscriber's interest should be paramount, by the way, is not just our own opinion here at MODERN LITHOGRAPHY. The basic principles outlined above are shared by the leaders of the trade paper publishing industry. *Business Week*, for example, in a recent full page advertisement in the *New York Herald Tribune* said:

> *"Nobody from the Advertising Department has ever attended a* Business Week *editorial meeting. . . . If Advertising sends Editorial a suggestion, it is dropped down the elevator shaft. . . . The editors proceed to their task: informing readers of the news, ideas and trends—from all the world—that affect business decisions. And nothing else. No puffs, no wisecracks, no purple prose. . . . Strictly the business news as they see it—uncolored, uninfluenced."*

The Associated Business Publications, leading trade association in the business publication field, in a recent membership letter said:

> *"We of the ABP should remind ourselves—unceasingly—that the first plank in our pioneering Code of Ethics is to consider first the interests of the subscriber. . . . We serve subscribers first.*
>
> *"The publisher degrades himself and his product when he buckles under advertiser pressures, or goes in for puffery, or targets his editorial service at the advertiser. . . . Advertising functions best in an editorial environment that is free of advertiser dominance or manipulation."*

It was thus with considerable dismay that we recently encountered a very flagrant example of a supplier and advertiser attempting to dictate MODERN LITHOGRAPHY's editorial policy. Within the past year the public relations advisor for one of our advertisers,—a litho blanket manufacturer—offered us an excellent article on blanket care. We accepted the article and ran it, not realizing that it carried a hidden "hook" in the form of a plug for the advertiser's product. When we realized this was the case, subsequent articles of the same type were refused.

Incidentally, having not "cooperated" editorially, MODERN LITHOGRAPHY will not be carrying this company's advertising for 1960.

By contrast, another publication in the litho field published three such "quiet sell" articles within 6 months. In their May '59 issue they carried an article, dealing ostensibly with a problem in litho presswork, which included the following tribute to the product of the concern whose PR man was responsible for preparation of the article:

> *"Volatile, fast-drying inks may affect the surface of a soft offset blanket by swelling it at the points where type is transferred. But the medium XYZ blankets (a product of XYZ Company) normally used for ....'s regular production on coated stock were also found suitable for aluminum foil."*

In July came installment No. 2. In an article dealing with quality control the following tribute to this same blanket was included:

> *"This sensitivity of color values to the blanket condition makes it essential to use blankets that are of completely smooth and even texture and that maintain an even gauge at all points even after long runs, according to pressroom foreman ..... Usually the choice for this application is an XYZ blanket, supplied by the XYZ Company, New York."*

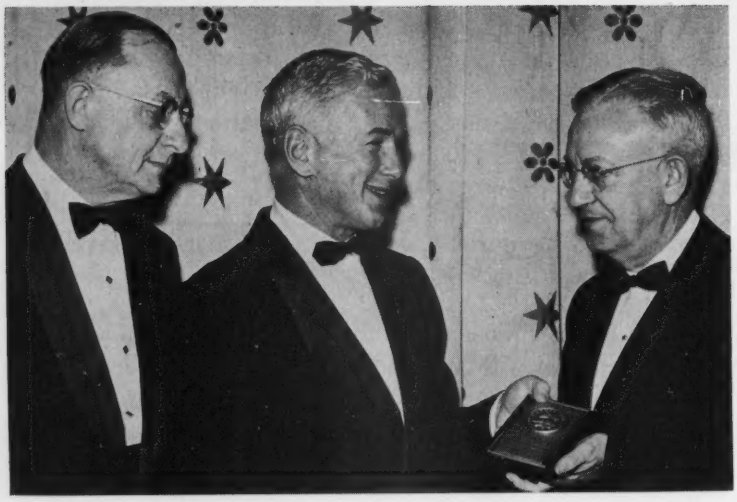
A third article on multi-color offset on acetate appeared in the September issue of the same publication, referring once more in glowing terms to the same product of the same company:

> *"The special inks also put special demands on the offset blanket. It was important that no embossing and tacking occurred, and that the image was reproduced perfectly up to the edge of the sheet. This required a relatively hard blanket that would withstand the effects of very fast drying inks and retain its gauge evenly across the entire surface. Yet the blanket would still have to be soft enough to transfer halftone details to the smooth surface of the acetate. The blanket was an XYZ brand, supplied by the XYZ Company."*

To our minds, surrender of control of its editorial product is a mistake which no self-respecting magazine should make. In our opinion, items about new products and equipment, clearly identified as such, qualify as legitimate editorial content; but bombarding readers with repeated advertising plugs, thinly disguised as editorial content — seems to be a flagrant violation of the principle that the subscriber's interest should be paramount.

To all our subscribers we say "Thanks for your continuing vote of confidence. When one of our advertisers directs a sales message to you, we will try to see that it is clearly identified as such. You can rest assured that MODERN LITHOGRAPHY's editorial pages will never be for sale."

L. E. Oswald Receives Voigt Award



L. E. Oswald (r.) receives an Elmer Voigt award at the annual Educational Awards dinner, from Harold Ross (l.) and Richard Small. Mr. Oswald, president of LPNA, was honored for his interest in and aid to graphic arts education.

Hubbard Addresses ECGAI

Over 200 persons attended the Educational Council's annual awards dinner held Dec. 5 in Washington, at which Frank Hubbard, assistant executive secretary of the National Education Association of the U.S., was the principal speaker.

Awards were made to Richard Leberman, 1st vice president, Graphic Arts Association of Wisconsin, the James J. Rudisill Outstanding Award; Douglas F. Reilly, president, Graphic Arts Institute of New England and W. Wayne Hogan, president, Graphic Arts Association of Cincinnati, Rudisill Achievement Awards.

Elmer G. Voigt Awards were presented to 14 persons, including Ralph D. Cole, LTF; L. E. Oswald, LPNA; and Stanley Rinehart, NAPL.

An Outstanding Service Award was presented to Augustus G. Giegengack for his contributions to the National Graphic Arts Expositions in 1927, 1939, 1950 and 1959.

•

Books Printed by Litho

A new San Francisco publishing firm, Hesperian House, has issued three lithographed books as its initial group of titles.

All three books were set by Photon Typographers, Oakland. Platework and presswork were done by Consolidated Printers of Berkeley and all were casebound by Cardoza Bookbinding Co., San Francisco. Each was produced in an edition of 5,000.

•

Press Rollers Kill Man

A freak accident brought death, on Dec. 8, to Joseph Hirtel, a pressman employed in the Chicago plant of R. R. Donnelley & Sons Co. A police report said Mr. Hirtel fell and was dragged into the rollers of a press, apparently after fainting or suffering a heart attack. He was 37 years old.

•

To Make Ice Capade Post Cards

Colourpicture Publishers, Inc., of Boston, manufacturers of Plastichrome, Plastarama and other four-color litho processes, have announced the completion of negotiations for the manufacture of double size post cards. The initial run of cards will be made for Ice Capades, Inc.

Onondaga Appoints Bingham

Onondaga Printing Co., Syracuse, has announced the appointment of Robert K. Bingham as sales manager. Mr. Bingham has been associated with the publishing, advertising and graphic arts industries since his graduation from Boston University in 1949.

•

Miehle Advances Hayes

James H. Hayes has been appointed New York manager of The Miehle Co., division of Miehle-Goss-Dexter, Inc. In his new position, Mr. Hayes will supervise all Miehle sales activities in New York and parts of New Jersey and Connecticut.

•

Packaging Institute Elects Six

The technical operations committee of the Packaging Institute, Inc., now has adopted the title of technical coordinating board of the Packaging Institute. W. B. Tibbets, Development Dept., Union Carbide Plastics Corp., has been elected chairman of the board.

Ernest A. Green, Printing Ink Div., Interchemical Corp., is the chairman of the Printed Packaging Division.

•

Clackworthy Joins Chemco

Chemco Photoproducts Co., Glen Cove, N. Y., recently announced the appointment of William Clackworthy as West Coast sales representative, with headquarters at 610 South Broadway, Los Angeles.

Mr. Clackworthy was most recently sales representative with Chemco's New York office where he served for seven years.

Arthur F. Stock Sends World's Biggest Christmas Card

Arthur F. Stock, (c.) Meehan-Tooker Co., New York, stands in front of his personal Christmas card — a 300 square foot poster in the heart of New York's Times Square. With him are S. Jesse Robinson, (r.), Outdoor Advertising Inc., and Harold R. White, Sales Executives Club of New York. Mr. Stock received the card poster prize at the Annual Christmas Luncheon of the Sales Executives Club of New York.

Chicago Craftsmen Hear About Brightype

THE Brightype conversion method for producing printing surfaces by photomechanical means is gaining favor among offset printers and in the rotogravure field, it was indicated by various industry spokesmen at a recent meeting of the Chicago Craftsmen's Club.

George Morrison, who developed the Brightype process in conjunction with Ludlow Typograph Co., Chicago, was the principal speaker. His exposition of the conversion system was supplemented by members of a panel who related their experiences in use of Brightype.

Brightype was defined by Mr. Morrison as "a bridge between hot metal methods of composition and the requirements for making printing surfaces photomechanically." He explained how a photographic image is produced from letterpress material and how the film is then used to make an offset plate or rotogravure cylinder.

An important element in the process, he continued, is the lighting system, which consists of a 66" disc which rotates at approximately 35 rpm's. On this disc light bulbs are located in such a manner that an even distribution of light is obtained on the film, without creating shadows on the copyboard.

Adjustments to take advantage of the depth of the lens make possible a tolerance of 25-thousandths of an inch, plus or minus.

"The accuracy of Brightype reproduction is such that it is now being successfully used for conversion of four-color process engravings for offset," Mr. Morrison declared. He also discussed possibilities for savings in paste-up operation which make opaqueing unnecessary.

Rand McNally & Co., according to one panel member, Floyd Cochrane, was the first book publisher to use the Brightype method to convert letterpress type to offset flats for book printing. He exhibited press sheets from an editor of the *Encyclopedia Americana*, set up, first, as a letterpress job, from which offset plates were made to be run on a high speed web-offset press. This set of 30 volumes, he said, includes 26,372 pages of text and 192 pages of color. Currently, he said, other Rand McNally trade books are being converted to offset by this means.

Lloyd Hollister, Inc., Wilmette, Ill., publishers of local newspapers circulated in suburban Chicao communities, has been using Brightype web-offset for some time, Clifford Frazier of that company said.

•

Directory Lists Art Sources

Chicago's commercial art resources available for lithographers and others, are presented in the 1960 directory of the Artists Guild of Chicago, recently distributed to art buyers, advertising agencies and others. Forty-seven pages of the 100-page booklet list names of Guild members, followed by a 25-page classification index with cross reference to members' services and specialties.

With this guide art buyers can locate the artist who specializes in anything from fine art to cartoons, from layout to lettering, package design, photography, retouching, typography or others among 16 different art areas. Other pages are devoted to the Guild's employment service, through which printers can be placed in contact with a wide variety of creative advertising and production personnel.

Among the 24 advertisers in the Guide are two lithographers, the Veritone Co. and Stewart & Fryer.

•

Jomac Appoints O'Brien

Thomas H. O'Brien has been appointed a representative by Jomac Inc. for sale of rubber rollers to printers and metal decorators in the New York area. His headquarters are at the company's New York office at 44 Cliff St., New York 38, N. Y.

Mr. O'Brien was a foreman at the Maspeth, Long Island, plant of Continental Can Co. from 1957 to 1959. He joined Continental Can in 1934, and was assistant foreman of the litho department of its Passaic, N. J., plant from then until 1957.

•

3M Plans Building in St. Paul

Minnesota Mining and Manufacturing Co., has announced plans to build a 14-story administration building at its research center, east of St. Paul, Minn. The building is expected to be completed by 1962.

The building will house the administrative offices of the research center which is to be completed by 1970. The research center will include 30 buildings, with a total area of 2,200,000 sq. ft.

The new headquarters building will become the center of a complex of buildings for staff and division offices and all related office functions.

St. Louis Graphic Arts Welcomes New General Manager

The St. Louis Graphic Arts Association recently held an open house to welcome its new general manager, Joseph H. Fitzpatrick, Jr. With him are Frank J. Merrill, (left) president of the association and Earl R. Britt (center) past president.

HOW DO YOU COMPENSATE YOUR KEY PERSONNEL?

What compensation and fringe benefits do lithographers generally grant key personnel? A good question . . . one which evidently is in the mind of many lithographers. We want to provide you with an answer to this question, not on the basis of the guess of a trade association executive, but actually on the basis of a survey of lithographers, their volume of business, the number of people supervised, etc.

Therefore, the NAPL outlines below a questionnaire with the suggestion that all lithographers who would like to see the lithographic industry pattern on compensating key personnel fill in and return this questionnaire not later than January 31, 1960.

SURVEY OF SALARIES AND FRINGE CONDITIONS GRANTED TO PERSONNEL WORKING IN NAPL PLANTS

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Personnel Employed	Department Covered	Working Note Yes or No	Number of People Supervised	Annual Salary	Year-End Extras Granted	Days Paid Vacation Granted	Value of Life Insurance Policy	Health & Welfare Benefits Provided? Yes or No	Absence Allowances Not Covered in Column 9	Comments You May Want to Make
Superintendent				$	$		$			
Foreman										
Foreman										
Foreman										
Foreman										
Scheduling Production										
Other Control Help										
Purchasing Agents										
Estimator										
Assistant Estimators										
Order Writers										

FILL IN AND MAIL THIS SURVEY TO
National Association of Photo-Lithographers
317 West 45th St., New York 36, N. Y.

Dear Mr. Soderstrom:

We would like.....copies of the Summary of the Survey of Salaries

Individual.....Title.....

Firm.....

Address.....

No. St. or Ave. City Zone State

Lithographic Sales 1959 Estimated as $.....

Letterpress Sales 1959 Estimated as $.....

Other Sales 1959 Estimated as $.....

Total Sales 1959 Estimated as $.....

Management Reports Evaluated

The preparation of management reports and their usefullness to a business owner were the topics discussed at the Dec. 3 meeting of the Metropolitan Lithographers Association, New York. The discussion was led by Theodore Willner, Mercury Press, and Paul Siesser, Schnieder Press.

The discussion developed that there are four four basic reports used by members of the group. There are two daily reports — a production report which gives the output of each press and the operational history and a daily financial report. The reports are not generally used in smaller shops where owner and production crews simply talk over the days' work.

In addition, most larger shops use two monthly reports: a production report which details information on such factors as overtime, downtime, idle time and chargeable and unchargeable extra time; and a schedule of hourly rates.

In addition to these reports, many firms use a standard monthly financial report and in some cases reports on sales, billing and orders.

It was pointed out, however, that too often management does not take full advantage of the reports furnished them by their staffs.

Accountants at the meeting said that an effective way to utilize the reports was to include a brief analysis of the figures.

It was suggested that the reports be discussed at meetings of plant supervisory personnel in order to encourage efficiency.

At the January meeting the MLA will discuss "Budgets and How Determined," with John Burke, Einson-Freeman Co., serving as chairman.

•

Du Pont Issues New Paper

A "Graphic Arts Register," designed for craftsmen who use film, is being published by the Du Pont Co. Photo Products Dept. Copies of the first issue have been mailed to more than 10,000 persons in lithographic, gravure, photoengraving, and allied fields.

Purpose of the paper is to provide up-to-date information on Du Pont's

New Du Pont Publication

new graphic arts products, to give technical advice and assistance on their use and to report how others in the field are solving problems that are common to the industry.

The new publication was distributed at the NAPL convention in Kansas City. It carries a message from Stanley R. Rinehart, NAPL president and manager of Du Pont's Printing Division.

Other feature articles include "Eliminating Process Camera Flare" by Robert T. Martin, Du Pont sales service technical investigator; a practical roll film dispenser developed by technical representative E. L. Christopher; announcement of a new "Graphic Arts Handbook" now in preparation by Du Pont; new color separation kit with color guide and gray scale; application chart for users of "Cronar" polyester graphic arts films; and two helpful shop hints—a tool for easier and faster stripping and a device for control of opaquing with small pointed brushes.

•

Dennison Advances Six

Dennison Manufacturing Co., Framingham, Mass., announced recently that Howard E. Gorton, Philip B. Hamilton and Howard C. Weeks have been elected divisional vice presidents.

Mr. Gorton becomes vice president in charge of the machine systems division and the industrial products division; Mr. Hamilton, vice president in charge of the resale products division and the holiday division; Mr. Weeks, vice president in charge of the gummed paper division and the box division.

An important new book

'The MAGIC of Making HALFTONES'

By K. W. Beattie

A handbook of ideas and techniques that will help the beginner make better halftones in just a few days . . . an excellent refresher for the veteran. Written in a lively, how-to-do-it manner, in easy language, by a man who has nearly 40 years experience in the trade.

Order this useful book today at just $4.25 a copy, shipped post paid any where in the world.

Your money refunded in 10 days if not satisfied.

• Scores of photos showing 'right' and 'wrong' • Working tools: where to buy them and how to make them • Setting camera • Focusing • Rescreening halftones • Shooting colored copy • Stripping • Platemaking • Special tricks

Make checks payable to
Litho Books
Box 31, Caldwell, N. J.

YES send me a copy of 'Halftones' at the price of $4.25.
(Check must accompany order.)

Name .....

Street .....

City .....**Zone**....

State .....

Do you own lithographic equipment?

Do you know . . .

1. What hourly costs are for lithographic operations?
2. What is a fair mark-up on paper, film, ink, plates, and outside purchases in so far as you, your salesmen, and your customers are concerned?
3. Do you have your own lithographic production standards?
4. When your pressroom is overloaded and you work unscheduled overtime, how can you recover this cost from customers?
5. What is a fair way to compensate lithographic salesmen?
6. Where you can see copies of forms used to schedule work through many well-managed lithographic plants?
7. What has been the experience of other lithographers with various kinds of pre-sensitized plates, new equipment and supplies coming on to the market?
8. What is the best kind of self-advertising for a lithographer?
9. Where you can secure building and floor plans for lithographic plants recently built?
10. Where can you secure an outline of the job duties of all officers, superintendents, foremen, and key personnel in a lithographic plant?
11. Where can you get case histories on Trade Custom disputes dealing over ownership of negatives and plates, etc.?
12. When the economics of a lithographic plant justify adding additional presses, photo composing, and graining equipment, etc.?
13. What the Fotosetter, the Photon, masking in the camera, etc., will mean in so far as the future of lithography is concerned?
14. How you can secure Budgeted Hourly Rates for your plant?

These are vitally important questions, every one of which deals with the management of your business both today and tomorrow. You, no doubt, have many more questions on your plant operations on which you would like to have prompt and sound answers.

The NAPL constantly receives requests for every kind of information from its large and growing membership in the United States and other countries. The NAPL has answered all of the above questions and many more.

If you are a lithographer, a printer, a firm who sells the industry, or even if you have no equipment, you can have complete information of every phase of lithographic management by joining in our aggressive trade association work. We offer a great deal for very little.

This coupon can bring you the answers . . .

NATIONAL ASSOCIATION OF PHOTO-LITHOGRAPHERS
317 West 45th Street, New York 36, N. Y. 1960

We hereby make application for enrollment as an active (Associate) Member in the National Association of Photo-Lithographers.

We enclose herewith $..... as our first year's dues.

ANNUAL DUES FOR THE PRESS EQUIPMENT IN OUR PLANT IS AS FOLLOWS:

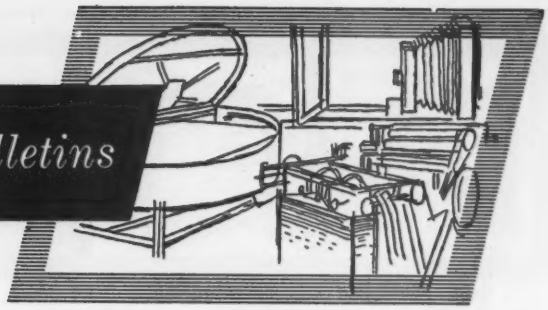
No. of Presses	ACTIVE MEMBERS (Those who operate lithographic equipment)	
	Presses smaller than 17" x 22" (Minimum Dues $50.00 per year) ..... $20.00 per press per year	$
	Presses 17" x 22" to 22" x 28" ..... $28.00 per press per year	$
	Presses larger than 22" x 28" up to and including 35" x 45" ..... $37.00 per press per year	$
	Presses larger than 35" x 45" ..... $47.00 per press per year	$
	MINIMUM DUES, $50.00 per year. Maximum Dues, $450.00 per year.	
	ASSOCIATE MEMBERS — Equipment and Supply Dealers, $125 per year.....Total Annual Dues	$

Firm ..... Name of Individual.....

Address ..... City ..... Zone..... State.....

Signed ..... Phone .....

Equipment, Supplies, Bulletins



Directory Corp. Develops List System

PRINTERS and publishers of directories, cross indexes, parts lists and other jobs on which the type is necessarily kept standing may be interested in a new process developed recently by the Directory Corp. of America, Washington, D. C.

Basically, the process is centered around a combination of a specially developed printing press and one of the listing cameras, such as Eastman's Listomatic or the Vari-Typer Corp.'s Foto-List.

Both cameras operate on the same principle: they take typewritten cards and photograph them in sequence to create a galley negative. The Foto-List is limited to a single line per card, the Listomatic can take one, two or three lines on a single card. Both operate at high speeds, the Listomatic at 7,200, one, two or three line cards per hour, and the Foto-List at comparable speeds.

These cameras have been on the market for several years. However, their use has been limited due to the fact that the only way to get a line on the card was by some "cold type" method using either Vari-Typers or electric typewriters, according to Directory Corp. Many printers with standing type problems have avoided these cameras because it would be necessary to retype all of the material they have in standing type in order to obtain the cards which the camera utilizes.

Directory Corp. reports it has developed a press which eliminates this costly retyping job and saves a considerable amount of time.

The press, at speeds of 1,000 lines an hour, prints the lines from 1,000 different slugs on 1,000 different cards.

With the use of the press and one of the listing cameras, metal type, occupying costly space, is eliminated.

Further information about the cameras may be obtained from the Eastman Kodak Co., Rochester, N. Y., or from the Vari-Type Corp., subsidiary of Addressograph-Multigraph, Cleveland, O.

Additional information about the slug-to-card press and applications of the press and camera combination may be obtained from John B. Davis, president, Directory Corp. of America, 2110 14th St., N. W., Washington 9, D. C.

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Schmidt Offers Plate Whirler

H. Schmidt & Co., Chicago, recently introduced a new Champion plate

New Plate Whirler

whirler. The whirler is mounted on an aluminum turn table which has a special patented hub shaft locking device, which, the company states, will allow removal of the turntable in five minutes for convenient maintenance.

Among the features cited by the company are a stainless steel disposal trough, absence of heating elements and braces in the aluminum cover; drying by filtered air forced through a 60″ slot in the revolving plate and recessed control panel with automatic devices to control temperature, speed and turning. The turntable revolves at speeds from 35 to 105 rpm.

•

Darkroom Sink Offered

Douthitt Corp., Detroit, is offering a new darkroom developing sink which features complete temperature control.

The standard unit is equipped to hold three solution trays in temperature controlled water. The bottom of the unit contains a refrigerated storage department. Both the water and refrigerator temperatures are controlled by a dual-control thermostat. The water control allows any temperature from 30 to 90°. The refrigerated compartment maintains a temperature of 65 to 70°.

•

Introduce New Zinc Alloy

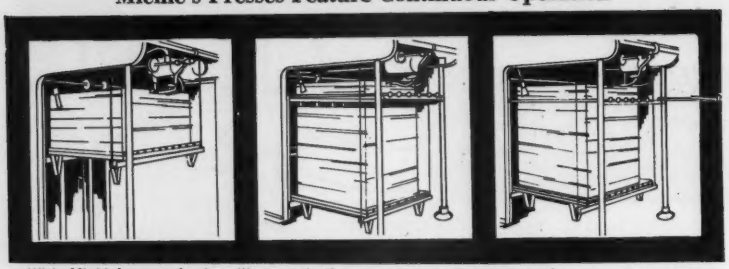
Illinois Zinc Co., Chicago, a division of Hydrometals, Inc., recently published a news bulletin which describes the qualities of its new zinc-copper-titanium alloy, called Hydro-T-Metal.

Aside from normal use of the alloy, especially in sheet metal form, of particular interest to lithography is the use of the metal in offset plates.

The company reports that plates made with the alloy will hold register longer than other metals. Furthermore, plates made with Hydro-T-Metal will not stretch or sag under pressure or temperature changes; will resist recrystallization and are rust, corrosion and pit resistant.

Further information is available from the company at 2959 West 47th St., Chicago 32.

Miehle's Presses Feature Continuous Operation



With Miehle's new feeder, illustrated, the operator need not stop the press to replenish paper supply. When the pile is down to the last few sheets, metal rods are inserted to support the remaining load end and the hoist is lowered to receive a new pile of paper. When the hoist, with the new pile, is raised the rods are removed and normal feeding resumes. The company's continuous delivery system operates in the same way, only the reverse of the feeding method.

To Market Lithomatic Press

Pittsburgh White Metal Co., New York, has been appointed sales and service agents for the Lithomatic No. 20 offset press in New York, New Jersey, Vermont, Massachusetts, Rhode Island, Maryland, Virginia, Delaware and Washington, D. C. It was first shown by the makers, Banthin Engineering Co. of Bridgeport, Conn., at the Graphic Arts Exposition.

The press has an automatic shutoff which stops both ink and water rollers instantaneously when the feeder stops. Maximum sheet size is 14 x 20″ with speeds of 5,000 per hour. Ink and water systems are completely separate from each other. The impression cylinder may be adjusted from either side of the press. Pull type side guides have external controls for adjustment while press is running. Feeder pile utilizes an air blast on three sides.

•

Distribute Hoh & Hahne Camera

Royal Zenith Corp., New York, has been appointed U. S. distributor of the Electronica and Precisa, automatic-focus reproduction cameras engineered by Hoh & Hahne Co.

Two basic designs in varied sizes and adaptations, are offered: a horizontal darkroom camera and a vertical camera in both darkroom and non-darkroom models. All models are equipped with automatic focusing and are electronically controlled, which the company states automatically brings copy into focus when size settings are made on a centralized control panel.

The Precisa vertical camera uses a two-lens system to achieve a range of sizes, which, according to the company, is equal to many horizontal cameras with a floor area of approximately 40 sq. ft. The copy, up to 20 x 28″, is held in a horizontal frame on which the camera focuses vertically through a lens-and-mirror system.

The Electronica horizontal camera, available for 24 x 24″, 32 x 32″ and 40 x 40″ negative sizes, is a darkroom camera offering a range of process camera applications, plus automatic focusing and centralized, single-position control.

Further information may be obtained from Royal Zenith at 180 Varick St., New York 14.

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New Traveling Vacuum Frame

An improved model of the Bruning traveling light vacuum frame, designed to save time, work and floor space while increasing print production, has been introduced by the Charles Bruning Co., Inc., Mr. Prospect, Ill.

The new model of the vacuum frame is an automatic, completely self-contained unit for exposing all light-sensitive materials in the horizontal position. It offers the advantages of flat, pressure, contact printing plus new operator conveniences and the assurance of evenly exposed prints.

Further information is available from the company at 1800 W. Central Rd., Mount Prospect, Ill.

•

Northwest Sample Folder

Northwest Paper Co., Cloquet, Minn., is distributing a folder containing samples of its "Mountie" offset antique wove. The samples show the eight colors and various weights in which the paper is available.

•

Polychrome Presensitized Plate

Polychrome Corp., Yonkers, N. Y., has introduced a new presensitized offset plate called Speedkote. The plate is two-sided, chemically grained and is made of a special aluminum manganese alloy.

The company points out that the plate is prepared for use after exposure by a single application of its new Quick Step developing lacquer.

•

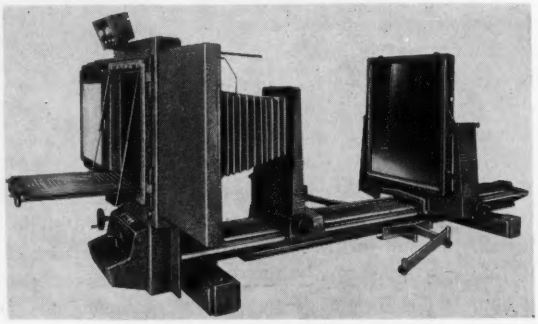
Michael Lith Offers Trimmer

A desk trimmer designed to eliminate scissors and razor blades for cutting photos and art preparation materials, photostats, negatives and single sheets, has been introduced by Michael Lith Sales Corp., New York.

Exposed parts on the Lightning trimmer are nickel plated and the base and table frame are of welded tubular steel with angle bars to prevent warping. It is available in three sizes, 14⅜, 18, and 26″. Top and bottom knives are made of hardened Solingen steel.

Information may be obtained from the company at 145 West 45th St., New York 36.

Brown Introduces Two New Commodores



W. A. Brown Mfg. Company's new addition to its Commodore line of cameras. It is available in 24x24″ and 30x31″. Information is available from the company at 608 So. Dearborn St., Chicago.

Champion Paper Bulletins

The Champion Paper and Fibre Co., Hamilton, Ohio, recently issued two product bulletins for paper users.

The first is a folder showing samples of the company's Ariel Bond colored papers, which describe the qualities of the stock.

The second is a folder containing cards which show various tables for solving problems in physical measurement in such areas as equivalent basis weights, conversion of ream weights and weight of paper in rolls. The folder is being distributed by Champion paper dealers.

•

Flexiguide for Davidson Presses

Hampton Processes, Inc., Newton, N. J., has announced the availability of the Flexiguide for all models of Davidson offset presses. It was developed last year as an accessory attachment for Multiliths. It is a flexible back paper guide to cut paper waste. The company states it will increase operator efficiency and allow closer quality control. A dual-spring system allows the operator to flip the Flexiguide upward in order to insert extra paper. The unit also prevents accidental damage to the paper platform by swinging upward when contact is made with the platform.

•

Crabtree Brochure Released

A brochure printed on a Crabtree Monarch press has recently been introduced to show the quality of reproduction obtainable with the unit. The booklet is comprised of a series of full color reproductions.

The Monarch is a two-color offset press 36 x 48¼" with pre-register plate clamps, pyramid inking system, continuously revolving ink duct and seven-roller dampening system.

The press is manufactured by R. W. Crabtree and Sons, Ltd., London.

•

Cleaner-Transparentizer Offered

CTS, a liquid for transparentizing, cleaning and sealing intermediates and one-sided materials, is now being marketed by the Ozalid Division of General Aniline and Film Corp., Johnson City, N. Y.

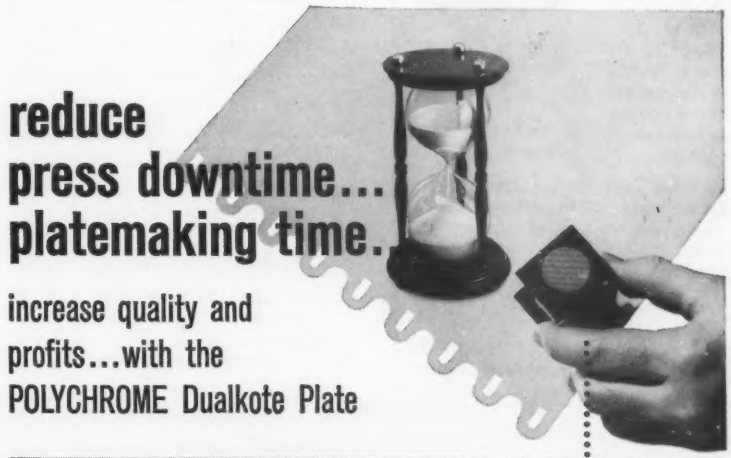
According to the company, it is suitable for transparentizing opaque paper stocks for use as masters in making offset printing plates, diazo and silver emulsion reproductions, cleaning soiled records, restoring vitality to deteriorated paper, removing pencil lines and smudges from paper or linen and providing tamper-proof master file copies.

•

Kodak Describes Filter Control

A technique which reportedly makes production quality halftone positives from inexact separation negatives is described in a newly published pamphlet, "Filter Control of Screen Positives Made with the Kodak Magenta Contact Screen" by Eastman Kodak Co. The eight-page pamphlet is punched for insertion in the Kodak Graphic Arts Handbook.

It outlines a technique to produce desired halftone positives from continuous-tone separation negatives which either lack contrast or have too much contrast. Where white-flame arcs and the Kodak magenta contact screen are used in making positives on ortho film,



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increase quality and profits...with the POLYCHROME Dualkote Plate

Top commercial lithographers demand the DUALKOTE Pre-sensitized Aluminum Offset Plate for the finest printing jobs.

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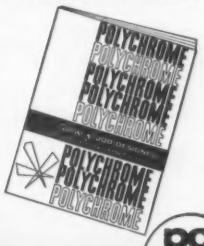

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Type 3, the pamphlet points out that the company's color compensating filters can be used in screening to control positives and thereby extend the range of usable negatives.

The company reports that the technique preserves tonal separation, especially in highlights, that might be destroyed by flashing techniques. It does not replace other methods, however, such as flashing, which are used in making halftone negatives.

The leaflet describes CC filters and how they work, gives "rules of thumb" on their use with white-flame arc light, and outlines an example in which CC filter use "saved" a set of separation negatives. Tables are included which determine the CC filter and exposure necessary for certain negatives, and which link filter density to its resulting density effect and exposure-change factor.

Single copies of the pamphlet, No. Q-105, are available upon request from Eastman Kodak Co., Graphic Reproduction Sales Div., Rochester 4, N. Y.

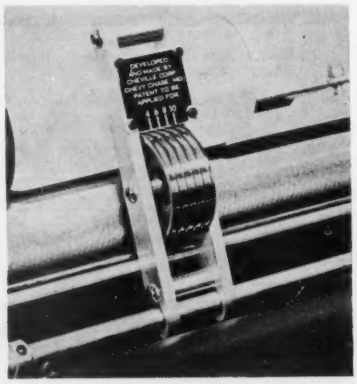
•

Ink Thickness Gauge Introduced

A gauge designed to allow control of the exact thickness of the ink film on lithographic press ink rollers has been introduced by Gardner Laboratory Inc., Bethesda, Md.

The gauge is a precision instrument consisting of six wheels mounted so that they can contact the surface of the ink roller. The two outer wheels are of the same diameter and directly contact the roller surface, while the four inner wheels are gradually smaller in size. The first is .0004″ smaller, the second is .0006″ smaller, the third is .0008″ smaller and the fourth is .0001″ smaller.

Ink Thickness Gauge



In order to determine the thickness of ink on the roller the pressman need only place the gauge against it and note the smallest wheel which strikes the ink film.

The company states that it is especially useful in quality control work on magnetic ink printing jobs where thickness tolerances are very critical.

Information is available from the company at P. O. Box 5728, Bethesda 14, Md.

•

ATF Introduces New Plates

The Lithomaster line of plastic plates and chemicals for small offset presses and duplicators has been announced by American Type Founders Co., Elizabeth, N. J. The ATF Lithomaster plates are available in 10 x 15″ through 17 x 22″ sizes, either as presensitized plates for photographic exposures, or as direct image plates for mechanical reproduction of copy.

ATF Lithomaster plastic plates have a thick white plastic coating on the working surface, similar to lithographic stone. Both the photographic plates and the direct image plates are for use on standard commercial printing presses such as the Chief 15 or Chief 20, and on regular duplicators such as the Multilith, Masterlith, A. B. Dick and others.

The company reports that after the plate is exposed in the vacuum frame, the surface is wiped with the desensitizer and run while still moist on the duplicator or printing press. The image is immediately visible upon exposure, this feature making it unnecessary to develop or otherwise test a plate to see if it has been properly made. In all other ways the plate is handled the same as standard zinc or other presensitized plates. The Lithomaster plates are rated at 5,000 copies, although longer runs are possible under optimum conditions.

The plates are available in four grades: 1) Short run, up to 500 copies; 2) Medium run, up to 1,250 copies; 3) Long run, up to 2,500 copies and 4) Xerox, up to 1,250.

Plate Hangers Offered

Press-Litho Cabinets, Los Angeles, is producing an inexpensive, plate

Press-Litho Cabinet's new plate hangers.

hanger to replace shower-curtain hangers and other makeshift devices.

Made of rustproof galvanized steel, formed at the correct angles for use, the new hangers, used singly for small plates, in pairs for larger one, have a curved end with 1⅝" inside dimension to fit over a 1" pipe. The hook end has ½" inside diameter.

More information may be obtained from the company at 2227 Sunset Blvd., Los Angeles 26, Calif.

•

Hammermill Advances Franzen

Hammermill Paper Co., Erie Pa., has announced the appointment of John E. Franzen as general sales manager.

Mr. Franzen has been with the company since 1946 and most recently was sales manager of the printing papers division of Hammermill.

•

Nathan Monosoff Dies

Nathan Monosoff, 60, owner and operator of the Crown Printing Co., Cleveland, died suddenly Dec. 2 at his home. Mr. Monosoff was born in Russia and emigrated at an early age. He was an infantryman in World War II.

•

MGD Appoints Kayser, Abrams

Charles D. Kayser has been transferred to the Los Angeles office of the Miehle Co. division of Miehle-Goss-Dexter, Inc., Chicago. He will work with C. R. Endicott, territory manager, who will retire soon.

Mr. Kayser had been general sales office manager since 1957.

E. M. Abrams has been appointed to the newly created post of vice president and general manager of The Lawson Co., division of Miehle-

Kayser

Abrams

Goss-Dexter, Inc. Mr. Abrams will continue to be located at the firm's national headquarters in Chicago.

•

Republic Buys Forester

Republic Litho Co., 104 E. Mason St., Milwaukee, announced the purchase of the Forester Label Works, at the same address.

Alonzo Fowle III, president of Republic, said the eight employes of Forester would remain. Republic purchased the Forester stock from the estate of the late E. H. Forester.

Both firms do general lithographing and letterpress printing.

•

GENERAL PRINTING EQUIPMENT & Supply, Inc., Miami, has been appointed an ATF type dealer for Florida.

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Sharpest, Highest Fully Color-corrected Lens available

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• *For all color or black and white applications*

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Canadian Distributor: W. E. Booth Company Limited, 12 Mercer St., Toronto, Can.

Rose Begins Building

Rose Printing Co., Tallahassee, Fla., has started construction of a $500,000 building. The company has also announced the opening of a new plant in Jacksonville.

The Tallahassee plant will replace the building which has housed the company since its founding in 1932. The Jacksonville plant is the fourth in the Rose chain. Other plants are located in St. Augustine and Miami.

Rose Printing was founded in 1932 by Samuel Rosenberg, formerly of Atlanta, one of the original partners and founders of Stein Printing Co. of Atlanta. Beginning operations with one letterpress plant and 12 employes, Rose now operates four plants, operating both letterpress and offset, with 200 employes.

Mr. Rosenberg retired in 1947 after his son, Charles, returned from service in the Marine Corps. The expansion of Rose Printing Co. in recent years is largely due to the elder Mr. Rosenberg's return from retirement according to the company. He is assisting in the operation of the Miami plant.

The Rose plants provide both letterpress and offset printing, advertising and art service and direct mail campaign facilities. In addition, Rose owns and publishes two dozen periodicals, including the nationally-distributed *Outboard Magazine* and *Outboard Progress*, devoted to the outboard motor field. All four plants are connected by teletype.

The company has won several awards at Southern Graphic Arts Association conventions for quality printing and has been commended by the Florida Legislature for printing of the official proceedings.

The Tallahassee plant will be a 60,000 square-foot, steel and masonry building, air-conditioned and air-humidified. It will be an integrated unit, with warehousing, shipping, administration and all phases of production under one roof.

•

Excello Press Entertained

Suppliers of Excello Press, Chicago, recently held a 25th anniversary party for the executives, salesmen and production supervisors of the company.

Forty-five suppliers were hosts of the party, which was climaxed with the presentation of a plaque of friendship to Messrs. Weissman and Feldman of Excello.

Internat'l Paper Advances Four

International Paper announced, in December, the advancement of four executives of its fine paper and bleached board division.

R. H. Hinman has been made manager of the Chicago regional office of the fine paper and bleached board division and assistant manager of the Midwestern region of the primary grades division.

R. E. Chase, Jr., has been named manager of the publication sales division.

George Stuhr, Jr., has been appointed assistant to the sales manager, in charge of special accounts and assignments.

L. T. Krumm, Jr., has been named manager of bleached board sales.

•

C & G Appoints Davis

The appointment of Charles J. Davis, Jr. a supervisor, rotary operations, has been announced by Cullom & Ghertner Co., Nashville.

WATER IN ALCOHOL

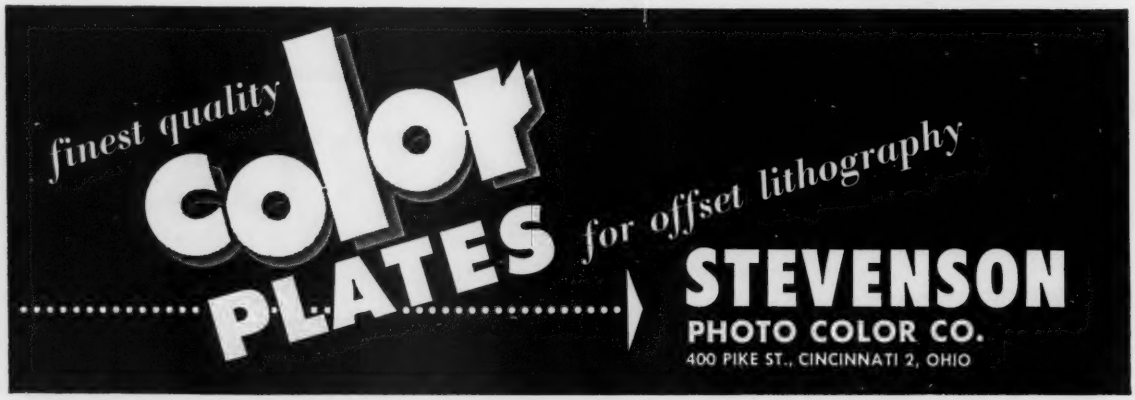
(*Continued from Page* 53)

conditions will result in a plate which has either "penetration" or a "blind" image or both.

The need for a simple method of determining small amounts of water in alcohol should now be quite apparent. This need is adequately met with the simple procedure described below.

Procedure for Measuring

The procedure for determining small amounts of water in ethyl



and isopropyl alcohol is as follows: 50 cc (approximately 1⅔ oz.) of the alcohol to be tested is put into a clean, dry glass beaker. To this is added two cc of the water detection reagent. The beaker is swirled to mix the alcohol and water detection reagent thoroughly. The next, and last, step is simply to observe the color of solution in the beaker.

If the liquid appears royal blue without any trace of pink, the alcohol is usable. The lack of pink color indicates that there is less than 3 percent water if ethyl alcohol was used for the test and less than 5 percent water if isopropyl alcohol was used. Conversely, if the color produced has a tinge of pink or is completely pink, the alcohol will be ineffective as a plate wash. This pink color denotes that if ethyl alcohol had been used it would have contained 4 percent or more water while a sample of isopropyl alcohol would have contained 6 percent or more water.

The theory behind the color reaction produced by the water detection reagent and the water in the alcohol is rather complex, but a common analogy will aid in its explanation. The principle used in this reaction is similar to that employed in simple color hygroscopes and the color changing type weather indicating devices. The chemical used in these hygroscopes and weather indicating devices changes between red and blue depending upon the water content of the air. On a humid day, a red color is produced while the blue color is produced on a dry day. In a similar manner, alcohol which has a "high" water content will produce a pink-red color upon the addition of the water detection reagent. If, however, the water content of the alcohol being tested is "low," a blue color will be produced upon addition of the water detection reagent.

More specifically, the color produced is dependent upon the number of water molecules available in the alcohol to combine with the water detection reagent. When there are no available water molecules, a royal blue color is produced in solution. As the number of available water molecules in the alcohol increases, there is a corresponding shift in color from blue to red.

Once the mechanism of the reaction had been established, it was necessary to evaluate various proportions of the chemicals in the water detection reagent. A formulation emerged from this testing which, when used as prescribed above, produces a visible color change at what is considered to be the critical percentage of water in both ethyl and isopropyl alcohol.

With the use of this water detection reagent it is now possible for the platemaker in a litho shop to determine, in less than a minute, whether the ever-changing alcohol he uses is still effective for removing the water of the deep-etch solutions from the plate.

The water detection reagent ("Aqua-Check"), the necessary glassware and suitable color standards are now available in kit form from Litho Chemical & Supply Co., Inc., Lynbrook, New York. The kit is being marketed under the name "Aqua-Check Kit."★

LETTERS

(*Continued from Page 26*)

The article, authored by Frank Preucil, appeared, I believe, a year or more ago... It deals with evaluation of process color inks etc.

J. P. Marshall,
Eastman Kodak Co.,
Portland, Ore.

Tearsheets of two of Mr. Preucil's articles—"LTF Color Survey," March, 1958, and "Evaluation of Process Inks," June, 1957—have been sent. The former is un-

Load – Flip – Expose
Three steps to faster platemaking!
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Close the glass frame. Pull the release knob and flip the vacuum frame over.
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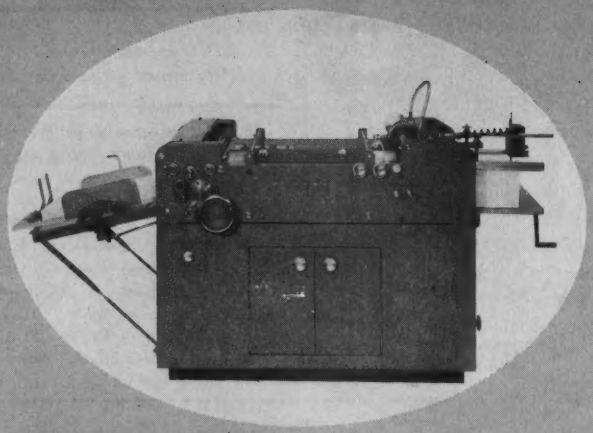

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For slot, strike, and snap-apart form perforating —for scoring, creasing and slitting

Designed for speed and built to traditional Rosback high quality, this NEW "JET-20" perforator fills the need for offset or letterpress sheet sizes printed on 14″x20″ presses. New features include:

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- Maximum sheet size 20″ x 20″.
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An owner of a "JET-20" reports:

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doubtedly, the one you are looking for. Glad to hear ML's articles are of such value to you.—*Editor.*

•

Polythene Printer

Dear Sir:

Your March, 1959 magazine was given to us by a friend of ours as we are interested in a small inexpensive printing unit to print on Polythene film.

We shall be obliged if you will put us on to a manufacturer of same, or let us have the name and address to enable us to correspond with one.

Y. Moosajee,
Moosajee Sons,
240 Dam St.,
Colombo, Ceylon

We think the Lee Machinery Co., 28 W. 23rd St., New York 18 may be able to help. Perhaps other firms will contact you also.—*Editor.*

•

Wants Military Manuals

Dear Sir:

Would you kindly send me the address of the government office where I may secure military standards on technical manuals. This information was mentioned in your February, 1959 issue of MODERN LITHOGRAPHY.

R. J. Fisher,
General Electric Co.
Philadelphia

We've located a set of the manuals in our files and sent them on to you. Incidentally, we have no other sets available and have been informed that these manuals are no longer available from the government.—*Editor.*

PERCENTAGE SCREENS

(*Continued from Page* 42)

to be dependent on which primary colors are to be overprinted.

The relation of all screen angles is shown in *Fig. 8.*

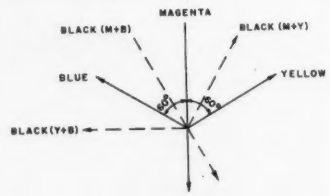

Figure 8.

The two charts (or legends) produced by the method described will show a total of 594 colors, (603 colors, if a black sequence of percentages is added separately), which may be produced by only four runs on a single color press or one run on a four-color

press, using yellow, magenta, blue and black.*

Preparation of Overlays

The colors for a map in preparation may now simply be selected by the author or draftsman from the color-charts and the pertinent percentages read off from the sides of the charts. The resultant percentage screens should each be affixed to the key-line area on the overlay for the specific basic color, using the correct screen angles. *(Fig. 8.)*

In order that the platemaker may obtain a better control of the dot-size, the screens are affixed to the reverse side of the overlays, ensuring a close contact when exposing the offset plates. It is advisable to provide each overlay with an opaque square or gray scale outside the limit of the map, in order to enable the printer to make constant checks for comparison with the primary colors shown on the color-chart. The overlays should be printed in the same basic colors adopted for the charts, and always in the same order; preferably yellow, red, blue and black.

General Observations

It may be expected, as this process is further developed and maps are prepared specifically with this method of reproduction in view, that the draftsmen may devise ways to facilitate the application of the percentage screens, such as preparing a separate overlay for color boundaries and using blue Astrafoils or Astrafoils etched on the side opposite from the one on which the screens are to be affixed and from which the key-lines may be removed before printing.

It must be emphasized that, although all symbols and other linework to be shown in black may be drawn on the black overlay and printed simultaneously, other linework desired in color will still require separate overlays and press runs.

In our test, a complicated geological map was successfully prepared and printed in accordance with the principles discussed above. Although not seriously impairing the process, it should be mentioned that the 80 percent screen was not used because the reduced transparency of the screen made the stripping into the key-line area cumbersome.

Astrafoil of thickness 0.00‴ was used throughout the process, both for drawings and overlays.**

When overlays with screens are subjected to shipping before printing, they should be accompanied by a diazo print of each overlay to enable the printer to verify that no screens have been dislodged. To facilitate the storing of overlays, especially when new editions are expected to be required with relatively few changes, it may be

*Eliminating the repetition of the tints of the primary colors, and not counting the color of the paper, the amounts of colors mentioned above should read: 541 and 549 respectively.

**The author reports that Astrafoil is a British product, manufactured by South Wales Chemical Works, Ltd., Frith Park, Walton-on-the-Hill, Tadworth, Surrey, England. He notes that products such as Mylar, Cronar and Stabilene are equally suitable for this work.

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  AL 5-3797
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  IV 3-6646
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  480 Canal Street, New York
  WO 6-4944
- OFFSET ENGRAVERS ASSOCIATES, INC.
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considered worthwhile to prepare deep-etch Astrafoil copies and eliminate the original overlays.

Acknowledgments

Tests were carried out under the general direction of Mr. G. J. Scholten, who evaluated the colors and supervised the preparation of the drafting and stripping work involved.

Reproduction was supervised by Mr. H. H. Bröcker and the printer was Mr. L. La Grenade, to whose skill we are much indebted for the perfect execution of offset plate and press work.

All are members of the Drafting and Reproduction Department of the Compañia Shell de Venezuela, in Maracaibo.★

PAPER

(*Continued from Page* 46)

and read to the left for the hours the skid should remain wrapped. This will be under the temperature difference figure—the top row.

2. When ordering paper, give the mill or merchant salesman all possible information, particularly the press-room conditions, if controlled.

3. If the pressroom is controlled, try conditions of 40 to 45 percent R.H. at 75°F. During the last few years it has been learned that operating at these figures is usually most successful.

4. Do not allow open skids to stand around the pressroom any longer than necessary without covering.

5. Keep work in process completely between printings or any other processing, die-cutting or embossing or whatever you are doing.

6. Above all try to keep pressroom conditions as uniform as possible. Every paper mill in the country is trying to furnish a uniform product. Since paper is a natural fiber, it is necessary to have certain ranges in practically all tests, even basis weight. We are continually trying to narrow these ranges but we are handicapped. Printers are handicapped also. But, both paper and pressroom conditions should be as uniform as possible and within as narrow a range as possible.

In addition to the above preliminary precautions, there are some things that can be done if you should get into trouble. One thing — useful only in a conditioned plant — is to *change the humidity to suit the paper,* particularly if it is received too dry. Consideration must be given, of course, to the effect on any other jobs that may be running at the same time.

Another corrective measure that is helpful is to protect the lower half or two-thirds of the skid with some sort of wrapper. This is useful on those rare occasions when the top part of the skid runs okay, but the lower part gives trouble. This is probably due to the paper changing as it stands in the feeder.

Both the above hints are most useful when the paper is going through the press for the last or only time. ★

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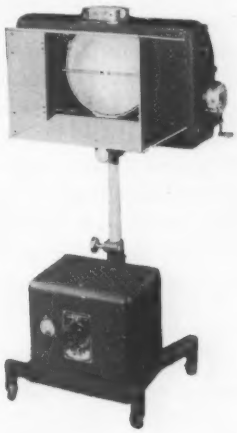

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EDWARD STERN

(*Continued from Page* 31)

other industries, as well as analyzing the standard payment plans in printing and lithography, Mr. Neibauer has established a new incentive program for Stern salesmen which includes salary, commission and bonus (instead of salary and bonus, as previously). All three factors are tied to escalator machinery which relate to each salesman's individual performance and to the company's profit picture.

"Having been a salesman all my life, I had a pretty good idea of what common sense incentives were needed to encourage maximum effectiveness by our men," Mr. Neibauer told ML. "Preliminary results have already partially justified the logic of our new approach."

Mr. Neibauer's second step has been to move toward national distribution. Hitherto concentrated in the Eastern Seaboard, Stern's sales now will be pushed in the national market. New sales territories have been established in all sections of the country.

With our strong service-minded organization which backs up our men with sales-planning, estimating, purchasing and customer service, the old image of Stern as a top quality, but high-priced house is rapidly being erased. "Just the high-priced tradition," he laughed. "We are still and will always be, a top quality house."

The sales manager argues that "any large, properly-managed printing firm with complete equipment can compete effectively on price by intelligent utilization of its facilities and personnel. He expounded this theme during a tour of the Stern plant led by senior vice president Alan B. Kirschbaum. "For instance," he commented, "Optak is unique and exclusive with us, and is favored by many customers because of its high fidelity reproduction using very fine screens on almost every kind of paper. Nevertheless, we employ a number of other offset processes as well, tailoring our thinking to the job.

"New employees, even those with years of experience, are thoroughly indoctrinated in how to get the best out of our facilities and talents, "Mr. Neibauer added. "That goes for everybody, from paste-up men to pressmen."

The Stern facilities include a creative department, large offset preparation department, a color separation department, composing room, letterpress department, and bindery. In the huge pressroom ML examined the output of many offset presses, including a 76-inch four-color giant, several 61-inch multi-color units, and a large number of smaller presses.

Officers Active in Trade Groups

The founder of Stern was president of the old Philadelphia Typothatae and the National Typothatae, forerunners of the present Printing Industries of Philadelphia, Inc., and Printing Industry of America. Julius Weyl, nephew of the founder, was a local vice president and national president of the same associations. Raymond Blattenberger, Public Printer of the United States, now

on leave of absence from his post as Stern's vice president, was president of both the local and national groups, and Joseph Matlack, a Stern vice president for 15 years, was also president of the local group in 1956 and 1957. Thus, Stern's long-standing slogan, "ask any printer," has a double significance, expressive both of the firm's relationship with many individual printers and its service to the industry at large.

Stern's eight-story brick building faces the new Independence Mall, around which are grouped many historic colonial structures including, of course, Independence Hall. The spaciousness of the Stern plant makes it possible for Mr. Arader to concentrate his investment planning in new equipment and processes, rather than in plant expansion.

Preliminary reports for 1959 indicate important sales gains for the year. The company refers to the next decade, which will conclude a century of service to the industry, as "The Golden Sixties!"★

PHOTO CLINIC

(*Continued from Page 60*)

would indicate an error in exposure or exhausted developer. With copies of lower contrast a different step is used. In all cases, the inability to achieve the correct density in the control step indicates something is wrong.

The same general procedure is applied to halftone work except that test negatives are first made to establish the proper balance in dot sizes for the steps in the scale corresponding to the highlight and shadow parts of the copy. Again, failure to achieve the control values indicates some variable in the operation.

If you used such a scale you would have less trouble analyzing your problem. You claim not to have trouble when making halftones with the contact screen. The control values established with this system, using the gray scale, could then be used to check the accuracy of the exposure and development of the Autoscreen negatives.

Instructions for using a five-step scale are outlined in the book *The Magic of Making Halftones*, by K. W. Beattie. (Available from MODERN LITHOGRAPHY, Box 31, Caldwell, N. J., at $4.25). A 12-step scale and detailed instructions are available at $2.50 each from Stouffer Graphic Arts Equipment Co., 311 N. Niles Ave., South Bend 17, Ind.

Correction

The Grand Book of Three Color Blending, reviewed in the November column, failed to mention both author and publisher. This outstanding book is the work of Prof. Hans Gaensslen and is published by Otto Maier Verlag, Ravensburg, Germany.

Also, the Penrose Annual is available from Hasting House Publishers, 151 E. 50th St., New York, not at the address given in December ML. ★

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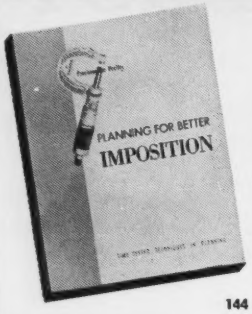

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PRODUCTION CLINIC

(*Continued from Page* 52)

sult is the same as when the stops are underlayed on presses without three-point register.

In the makeready, before making an adjustment for paper distortion, it is better to run several waste sheets. Register cannot be determined until several sheets are run from the regular stock immediately following the waste sheets. It is wise first to register the gripper end of the job without using waste sheets, since the difference in the stretch between waste sheets and the paper used for the job causes the print to appear doubled or blurred on the regular stock. This is especially true in multi-color printing.

•

Patching Under Halftones

Q: "What is a good method to use for patching a blanket? Can a small patch be placed under a halftone without its showing in the design?"

A. G. DETROIT

A: A very good method is to lift the blanket and hold it directly underneath a piece of tissue large enough to cover the weak area. Proceed to mark the blanket in the usual way, using a rather hard pencil. This will perforate the tissue and mark the canvas where the weak spot is positioned. When the tissue is torn along the perforation, it will fit the marked area perfectly and the edge will be feathered so that no hard edge will show in the halftone. If an additional patch is needed, do the same thing, only make it a little bigger.★

PRODUCT PERFORMANCE

(*Continued from Page* 49)

every piece of film exactly alike, this is impossible because of the intricate chemical nature of emulsion formulation, the precision required in the coating process, not to mention the effects of age as the changeable material starts off in life—part of it on the distributor's shelf.

Nonetheless, even if it were possible to make an ideally uniform sensitized product, it would be impossible to control all the developer compositions, degrees of exhaustion or temperatures, which contribute a far greater degree of product variation than is permitted under the manufacturer's standardized condition. In addition, he connot economically test for all conceivable processing variations, because carrying this to extremes would require consuming the factory output. Even a small step in this direction would be economically prohibitive.

Summary

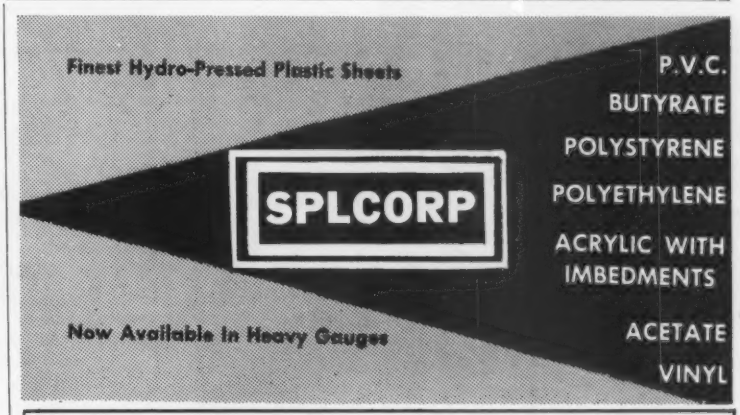
We have given a brief indication of how finished product specifications are established. This can be restated in summary as follows: *Consumer requirements plus the manufacturers' capabilities, after introducing a subjective "fudge factor" yields the product performance. Since a special product cannot be made fo reach consumer, our composite consumer is a weighted one, representing the best average of all those who find a given product the answer to their requirements.*

Product performance is also limited by the manufacturing capability to produce a material meeting the consumer's needs.

What we end up is a product, manufactured with all characteristics falling within a limited range, that is intended to be used under conditions that are also limited in scope.

When the ranges overlap, everyone is happy, but when some characteristic falls outside this happy operating ground, the field representatives have a field day, and perhaps it is time to be considerating a new, improved product.

Such a situation is not beyond the realm of possibility. However, to meet with success even in the conception stage calls for review in the light of the economics involved—the potential market — the technical requirements and lack of conflict within themselves — and, of course, the capability of manufacturing a product having the desired characteristics.★



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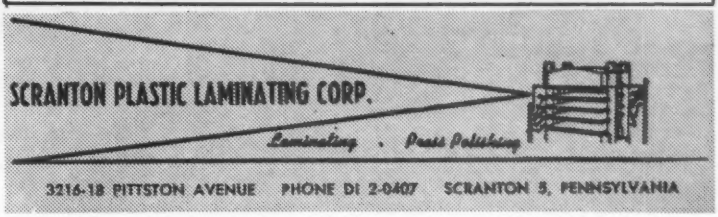
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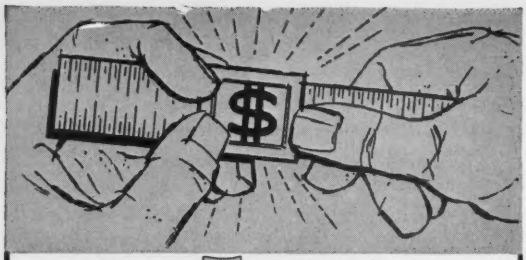

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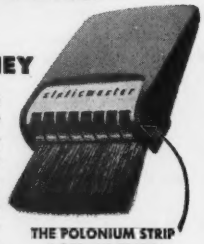

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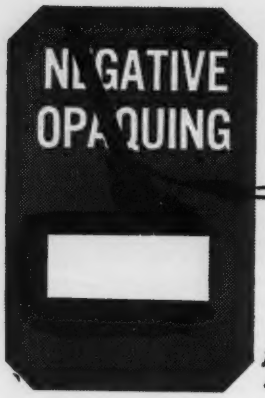

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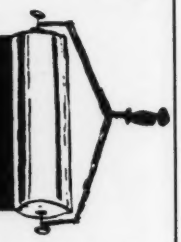

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Book Review

COLOR SEPARATION PHOTOGRAPHY FOR OFFSET LITHOGRAPHY (with an introduction to Masking) Skilled Craft Text No. 509, by Erwin Jaffe, Edward Brody, Frank Preucil and Jack W. White. Lithographic Technical Foundation, 131 E. 39th St., New York 16. 210 pp. plus index, many charts and halftone illustrations, some in process color. $2.40 to LTF members, $8 to non-members, plus shipping.

LTF has come up with another winner in its new volume on color separation photography. While the book carries the same number as its predecessor on this subject, it is actually a completely rewritten work, with much new material added. It is intended for the "capable black-and-white halftone photographer, to help him get a good working knowledge of color separation work."

The four-man Foundation team has produced a well thought out and highly readable volume on a subject that, to judge by inquiries to ML, shares with web-offset the spot of most popular in the litho industry. It starts with a chapter on copy for color reproduction (reflection, transparent, handling original copy, etc.) and goes right on through to photographic color proving.

A practical feature of this volume is a section entitled "Tricks of the Trade" which is appended to five chapters.

While it may seem a bit out of order to put such a basic chapter as "Color and Light" at the end of the volume, this was probably done for good reason — to prevent the timorous photographer from being scared away by what can be a confusing subject; although it must be said the topic is handled quite clearly here.

A valuable set of appendices gives tips on such things as making a transparent vacuum film holder,etc.

This beautifully lithographed volume is highly recommended.—*H.C.C.*

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TALE ENDS

ADVOCATES of the occasional use of spirits, among whom, we have been led to believe, there is a smattering in the lithographic industry, will find comfort in a loving history of that famous aid to conviviality — gin, and the English company so closely associated with it for close on to 200 years in a new volume entitled *The Kindred Spirit, a History of Gin and the House of Booth*, by Lord Kinross (21 shillings, Newman Neame Ltd., 50 Fitzroy St., London W1).

The 100-page volume, 7¼ x 9½" is a beautiful lithographed job printed by CAPS Ltd., who were faced with such problems as reproducing historic illustrations from rare books that, for obvious reasons, could not be taken apart for the camera. A special copyholder was designed to hold the books. Illustrations, some in color, cover the history of gin, or Geneva, as it was once called, and the development of the Booth Company.

Aside from its graphic arts interest, however, the volume contains a verse which may provide a rebuttal for your wife, next time you come late from the Litho Club:

Well, if it isn't gin
Was meant to do us in
The chances are it's lemonade or dates.
You never saw such saints as my two brothers,
Yet both of them are dead and gone, my dear;
Teetot'lers seem to die the same as others
So what's the use of knocking off the beer?

•

Chicago lithographers have long known Charles Roeder, proprietor of the Roeder Studios, offset plate making firm, as a highly skilled craftsman. More recently the industry learned that he is also a photographer whose talents have won him many awards in amateur camera club contests. Mr. Roeder's sideline role came to light when a *Chicago Tribune* reporter decided to learn more about this man whose outstanding photographic character studies were copping so many prizes. In Mr. Roeder's living quarters above his platemaking plant the newsman got a tale of what he termed "one of Chicago's most unusual photo companionships."

Eight years ago, this lithographer-photographer got tired of taking practice portrait shots of a wax store dummy he had been using. What he needed, he decided was "real people." And the man who has filled the bill ever since turned out to be the fellow who had been sweeping the floor and keeping the shop tidy for years.

"Roeder's ability as a make-up man and his creativity as a photographer," says the Tribune story, "turned the 72-year old janitor into a veritable 'man of a thousand faces.'" Some of Roeder's shots, reproduced with the article, show his model as a cobbler, a priest, a German army officer and a woman gossiping on the telephone. Other models he finds among the show people and the incredibly varied crowds of rugged characters he meets just beyond the downtown "loop" district. Mr. Roeder is a member of the nearby Lawson Y.M.C.A. camera club and is in several printing organizations.

•

Incidental Intelligence: The Shreveport Litho Club meets at the Kickapoo Motel.

•

One thing leads to another: During the recent printing strike in England, a pressman took a job as a truck driver with St. Martin Preserving Co. to help ease the financial pinch but promptly got himself pinched even harder after he made off with 55 jars of marmalade.

•

The staff of Modern Lithography thanks everyone who sent beautifully lithographed cards and calendars during the Christmas season and wishes all our readers a Happy New Year!★

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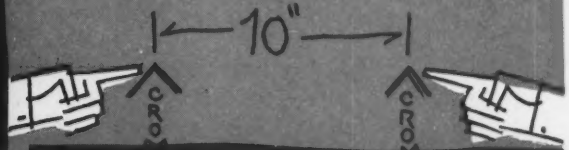

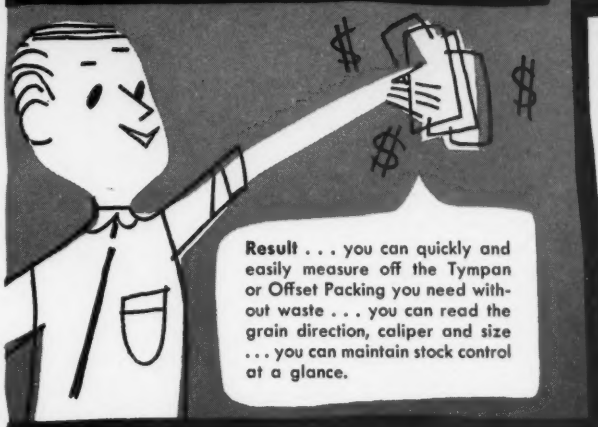

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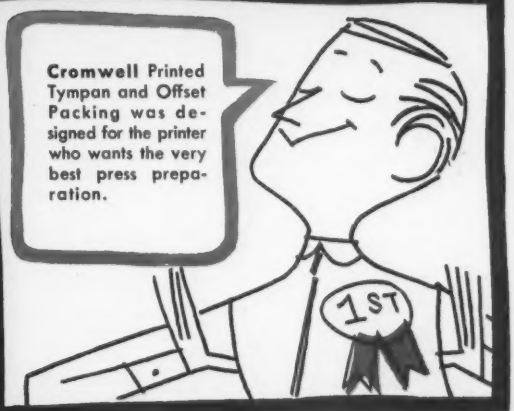

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